It's for love not money:
Queensland graziers' perceptions of sustainable development

Jennifer Moffatt

A thesis submitted for the degree of Doctor of Philosophy at

The University of Queensland in June 2008

School of Natural and Rural Systems Management

Declaration by author

This thesis is composed of my original work, and contains no material previously published or written by another person except where due reference has been made in the text. There are no jointly authored works included in my thesis. There have been no contributions by others to my thesis beyond that given by my advisory panel in that role.

The content of my thesis is the result of work I have carried out since the commencement of my research higher degree candidature and does not include any work that has been submitted to qualify for any other award in any university or other tertiary institution.

I acknowledge that an electronic copy of my thesis must be lodged wit the University Library and, subject to the General Award rules of The University of Queensland, immediately made available for research and study in accordance with the *Copyright Act 1968*.

I acknowledge that copyright of all material contained in my thesis resides with the copyright holder(s) of that material.

Statement of Contribution to Jointly Authored Works Contained in the Thesis

No jointly authored works

Statement of Contributions by Others to the Thesis as a Whole

No contributions by others

Statement of Parts of the Thesis Submitted to Qualify for the Award of Another Degree

None

Published Works by the Author Incorporated into the Thesis

Moffatt, J. 2005 'Engaging rural and remote communities: A practice framework', in the proceedings of the International Conference on Engaging Communities, 14-17 August (www.engagingcommunities2005.org).

Partially incorporated into Chapters 2 and 5.

Additional Works by the Author Relevant to the Thesis but not Forming Part of It

Ross, H, Moffatt, J, Witt, G, Dale, A 'Of people, their properties, policies and plans: integrating government, regional and landholder effort in Australian natural resource management' (under review, accepted subject to revision).

Acknowledgments

I would like to thank the many people who have contributed to this thesis. First and foremost I thank the Central West and Gulf graziers for sharing their views with me, taking an interest in the study and for their generous hospitality. A special thanks to the small group of people who took a key role through repeated discussions during and after the fieldwork period. I thank them for the time, their insights and their generosity. In addition I thank the many other individuals and representatives of organisations in these areas for enhancing my understanding of the people and the places.

I wish to thank my primary hosts – Barb and Noel Anderson of Longreach, and Doug and Tania Quirk of Normanton. They gave me a home-away-from-home and friendship; they shared their understandings and posed many challenging questions about the topic. I thank my other hosts too, but because they were study participants, they must remain anonymous. Thank you to Tony Rayner, Department of Primary Industries and Fisheries, for the providing office accommodation in Longreach and Normanton. This was the most valuable resource during fieldwork.

Thank you to my advisory panel. Professors Helen Ross, Geoff Lawrence and John Taylor provided enthusiasm, support and advice. The combined disciplinary perspectives created a valuable richness. Others who made an important contribution are Dr Rosemary Whip, Dr Mal Wegener, Dr Penny Wurm, Professor Barbara Pini, Professor Christa Critchley and Mark Ruddell. I thank them for their support and assistance. Thank you also to fellow students, friends and family.

The candidature was supported financially by an Australian Postgraduate Award, scholarship top-up and operational funds from the Cooperative Research Centre for Tropical Savannas Management and post-graduate support funds from the School of Natural and Rural Systems Management.

Abstract

Despite a National Strategy for Ecologically Sustainable Development and the embodiment of this in numerous national and state statues, environmental degradation continues to occur on rural land. This raises the question of how the primary land managers in Queensland perceive sustainable development. Australia's early reliance on agricultural production and international markets contributed substantially to the extensive environmental degradation that has occurred. Consequently economic and environmental issues have dominated the research on sustainable development, with the social dimension relatively neglected. In addition, despite the large quantity of work that has been conducted with farmers and graziers, little is known about how either of these types of land managers interpret sustainable development. The aim of this thesis was to develop an in-depth understanding of graziers' perceptions of sustainable development to make a contribution to this area.

An exploratory interpretative approach was taken to conduct this investigation because previous research had been limited. In-depth unstructured interviews were conducted with 57 Queensland graziers in the tropical savannas in a case study with two locations – the Gulf of Carpentaria and the Central West. This approach was supported by participant observation and a brief questionnaire to provide background information. The fieldwork was conducted over a period of five months which allowed analysis to be conducted as the study progressed. Most of the graziers were interviewed on their properties with the goal of adding richness to the data and assisting with interpretation.

Several bodies of literature have been used to interpret the results of this study. Areas of the sustainable development literature relevant to this thesis are reviewed to provide a context for the thesis. The literature on structural change in Australian agriculture provides a background to the broad influences on the agricultural sector and farmers. Also reviewed are the approaches taken to change the land management practices of farmers. The enduring value of farming and the changing values of rural land use are explored through a review of agrarianism, the goals and values of farmers and the post-productivist transition.

The results for both study locations showed that these graziers preference the economic dimension of sustainable development over the environmental and social dimensions. The rationale for this preference is that maintaining economic viability will allow them to achieve

their social goal – to continue their preferred way of life. A strong focus therefore, is on economic viability as a means to a social end. The objective is to overcome the constraints of being market and season dependent and the costs of operating in rural and remote locations through a whole-of-enterprise business management approach.

The need for graziers to continue increasing their productivity to remain economically viable and to continue being competitive in international markets, challenges their ability to balance the economic and environmental dimensions of sustainable development. For some the environmental dimension of sustainable development may be compromised to accommodate their economic priorities and social goals.

A perceived future threat, more so for Gulf graziers, arises from the belief that they and their interests are marginalised through consultation processes. This contributes to their belief that the government prioritises Aboriginal land rights and environmental protection interests over their production interests. They believe that if this continues their future is at risk through further decreases to the security of their tenure.

The results of this study suggest that a more innovative and integrated approach will be required to meet the challenges of sustainable development in these areas, in early twenty-first century Australia. The holistic approach from a social science perspective has provided an understanding of what graziers value and why. These insights contribute to knowledge of how to progress sustainable development. They could be tested with other types of land managers and as a foundation on which to build a more comprehensive understanding of sustainable development.

Keywords

Sustainable development; graziers; farmers; agriculture; land management; business management.

Australian and New Zealand Standard Research Classification (ANZSRC)

1. Studies in Human Society Group 1699; Other Studies in Human Society 70%.
2. Environment Group 9699l; Other Environment 20%.
3. Agricultural and Veterinary Sciences Group 0701; Agriculture Land and Farm Management 10%.

Contents

List of Tables

List of Figures

List of Abbreviations

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
AFFA	Agriculture, Fisheries and Forestry - Australia
ANZECC	Australian and New Zealand Environment and Conservation Council
ATSIC	Aboriginal and Torres Strait Islander Commission
ASTEC	Australian Science and Technology Council
CIE	Centre for International Economics
COAG	Council of Australian Governments
DAFF	Department of Agriculture Fisheries and Forestry
DCITA	Department of Communications Information Technology and the Arts
DEH	Department of the Environment and Heritage
DEWR	Department of Environment and Water Resources
DNR	Department of Natural Resources
DNRM	Department of Natural Resources and Mines
DNRMW	Department of Natural Resources Mines and Water
EMS	Environmental Management Systems
FarmBis	Farm Business Improvement Scheme
ILUA	Indigenous Land Use Agreement
UK	UK
LWRRDC	Land and Water Resources Research and Development Corporation
NAP	National Action Plan for Salinity and Water Quality
NHT	Natural Heritage Trust
NLWRA	National Land and Water Resources Audit
NSESD	National Strategy for Ecologically Sustainable Development
PMP	Property Management Planning
RAPS	Remote Area Power System
TS CRC	Cooperative Research Centre for Tropical Savannas Management
UNCED	United Nations Conference of Environment and Development
WCED	World Commission on Environment and Development

Chapter 1: Introduction

Background

The goal of sustainable development, which was identified as a global challenge in 1987, is 'to meet the needs of the present [generation] without compromising the ability of future generations to meet their own needs' (WCED 1987, p. 8). The notions of responsibility to others, dependence on natural resources and the need to provide for the future, which underpin the concept of sustainable development are ancient (Reid 1995), but it was the environmental degradation caused by the resource-intensive economic development that become apparent in the 1960s and 1970s which led to international recognition of the problem (Adams 1990, p. 70). This identification of the interdependence between the social, economic and environmental dimensions within and between generations, is reflected in Australia's overarching national policy on sustainable development, the National Strategy for Ecologically Sustainable Development (NSESD) (DEH 1992).

Agriculture was fundamentally important to Australia's economic viability for much of the twentieth century, contributing more than 80 percent to the value of exports until the late 1950s (ABS 2005a, p. 437). Government support for agriculture was provided to farmers to increase food production to meet post-World War II food shortages (Argent 2002), then for the expansion of agricultural production to assist with balance of payments problems (Lawrence 1987). Productivist agriculture encouraged the intensification of farming through such activities as broadscale tree clearing and the use of fertilisers and pesticides to promote increased productivity (Lawrence 2005). The farming practices associated with the mechanisation of agriculture accelerated production following World War II (Barr & Cary 1992). These farming practices, which were promoted by government to increase production, were based on European models; they thus became the primary cause of environmental degradation because they were inappropriate for the Australian environment (Barr & Cary 1992; Gray & Lawrence 2001; Vanclay & Lawrence 1995).

Reports identifying extensive land degradation were written as early as 1901 (Holmes 2002, p. 363), then again in the 1930s after widespread drought (Barr & Cary 1992, p. 27). This resulted in many states enacting soil conservation legislation measures (Vanclay & Lawrence 1995). The implications of significant land degradation did not receive national policy

attention until the 1980s (Hutton & Connors 1999, p. 167; Woodhill 1999, p. 31) and environmental degradation remains a significant problem in Australia (DEWR 2001, 2006; Gretton & Salma 1996; Industry Commission 1997; Tothill & Gillies 1992).

As a result of changed trading relationships, global overproduction in agriculture (Vanclay & Lawrence 1995), lower prices and increased costs of production, the terms of trade for agriculture began to decline in the 1950s (Lawrence 1987, p. 28), creating a cost-price squeeze for farmers that became significant in the 1960s (Higgins & Lockie 2001, p. 182). Then globalisation impacted on agriculture by redefining economic relationships (Bourke 2001b), with Australia's response being the introduction of economic rationalist policy settings in an attempt to enhance international competitiveness (Gray & Lawrence 2001). This resulted in the deregulation of industry – including agriculture – from the 1970s to maintain international competitiveness (Tonts & Jones 1996, p. 140). The government support for the earlier increased agricultural production came in the form of valuable taxation concessions for property development, statutory marketing schemes[1] which guaranteed a product market and a minimum price for produce, free extension services, fuel subsidies and a raft of other direct financial supports (Lawrence 1987). The loss through deregulation of these financial supports, which had assisted some farmers to manage the cost-price squeeze, created substantial financial difficulty for many. Farmers were expected to become financially independent of government through increased efficiency and productivity, and to be competitive in international markets (Higgins & Lockie 2001). Productivity has increased, particularly in cropping, but the productivity increases in livestock production have not kept pace with the cost-price squeeze (Ash & Stafford Smith 2003; Hooper et al. 2002; MacLeod & McIvor 2003). Deregulation extended to the privatisation of infrastructure and services which resulted in substantial negative impacts on rural communities because many services were lost (Tonts & Jones 1996).

This overview of Australian agriculture reveals significant forces that have shaped land management practices. Australia's earlier economic reliance on increasing agricultural production, and particularly to correct balance of payments problems, contributed to the use of land management practices that are now known to have been environmentally destructive. This was followed by a cost-price squeeze for farmers which was exacerbated by the loss of

[1] Beef producers did not have a statutory marketing scheme.

financial supports through deregulation. Comparatively recently the interdependence between the social, economic and environmental dimensions has been recognised in Australian policy, and this has raised the profile of environmentally sustainable production. This set of circumstances suggests that sustainable development in Australian agriculture may face particular challenges.

The Problem

Despite the introduction of the NSESD in the early 1990s to promote sustainable development, there is little evidence that the problem of environmental degradation is being addressed adequately (AFFA 1999; Barr & Cary 2000; Cary, Webb & Barr 2001; CIE 1997; Cocklin 2005; Commonwealth of Australia 2001; Curtis, Lockwood & MacKay 2001; DEWR 2001, 2006; Environment Protection Agency 2008; MacLeod & McIvor 2003; NLWRA 2001; Wilson 2004). The adoption of sustainable land management practices has been slow (Barr & Cary 2000; Cary et al. 2001), over-grazing continues, dryland salinity has increased, and further tree clearing has contributed to environmental degradation (Dibden & Cocklin 2003; Gray & Lawrence 2001; Nelson et al. 2004; Riley et al. 2002; Stafford Smith, Morton & Ash 2000; Tonts & Black 2003). Tothill and Gillies (1992, p. v) found 'widespread deterioration in most pasture communities in Queensland'.

Initially the goal of government support was for increased agricultural production (Argent 2002). The dire financial predicament of many farmers, caused by the cost-price squeeze, resulted in the creation of a rural adjustment scheme in 1971 to assist farmers to become more viable or to exit farming (Higgins & Lockie 2001, p. 182). In 1977 this changed to the provision of financial assistance for farmers in difficulty who had the potential to become more efficient and therefore independent of government, and to improve their land management practices to reduce further degradation (Cockfield & Botterill 2006, p. 74). A review of the Rural Adjustment Scheme identified that business management skills were central to farmers operating effectively (McColl, Donald & Shearer 1997). This resulted in the introduction of funding to support training in this area (McColl, Donald & Shearer 1997). These opportunities have been taken up by farmers (Queensland Rural Adjustment Authority 2004). Although a rural adjustment scheme continues to exist, with the government's emphasis moving to the protection of natural resources from what previously had been solely a production focus (RM Consulting Group 2006), the scheme assists farmers with the

potential to become viable (Cockfield & Botterill 2006) and the remainder are expected to exit.

The goal of the Decade of Landcare in the 1990s – a major government initiative – was to improve the land management practices of farmers through raising awareness of environmental problems (CIE 1997; Fenton, MacGregor & Cary 2000), and improved land management practices have been associated with this program (Cary & Webb 2000; Curtis & De Lacy 1996; Davenport 1997). The same goal has been pursued, but through regionally-based partnerships between community, government and industry (Bellamy et al. 2002; Cocklin, Dibden & Mautner 2006).

The major regional initiatives were the National Heritage Trust (NHT) and the National Action Plan for Salinity and Water Quality (NAP). In 1997 the NHT was set up to restore and conserve Australia's environment and natural resources (Australian Government 2008c) through biodiversity conservation, sustainable use of natural resources and community capacity building and institutional change. The goal of the NAP was to address two major natural resource management issues through the identification of the most affected areas and funding projects identified through regional planning (Australian Government 2008b). After the NAP was initiated the regional component of the NHT program was delivered in conjunction with NAP and this now operates in the 56 regions that cover Australia (Australian Government 2008a).

The history of the earlier economic importance of agriculture, combined with the past extensive environmental degradation, has served to focus discussions about sustainable development and natural resource management on the economic and environmental dimensions of sustainable development, while the social dimension has been neglected in Australia and internationally (Scott, Park & Cocklin 2000). Despite the combined economic and environmental emphasis, environmental degradation caused by agricultural land management practices continues, while some farmers continue to struggle with the ongoing cost-price squeeze. However, there has been limited investigation taking a holistic, integrated approach to investigate why these problems persist (Black 1999). There is a recognition that the barriers to improved natural resource management are largely in social systems and values, not with biophysical processes (Moore 2000; Patterson & Williams 1998) and that the strength of social science is its ability to frame the context within which other knowledge may

be applied (ASTEC 1993). These perspectives are consistent with the view that social science has a role to play in better understanding natural resource management issues (Mobbs & Dovers 1999).

This study

The large amount of land used for agricultural purposes and the size of the beef industry make sustainable grazing land management an issue of significance for Queensland. Almost 60 percent of land in Australia is used for agricultural production, and almost a third of this is in Queensland (ABS 2001, p. 58). Over half (56 percent) of land used for agricultural production in Australia is used for livestock production (NLWRA 2002, p. 8). Beef accounts for most farming establishments in Australia (ABS 2001, p. 11) and is the largest agricultural industry in Australia (DAFF 2005, p. 5), with the majority of beef grazing occurring on native grasslands (DAFF 2005). Of the 1.7 million square kilometres in Queensland, more than 1.4 million square kilometres consists of agricultural farms (ABS 2001, p. 58). Of this, 93 percent is grazing land (ABS 2008, Table 4), so most land in Queensland is managed or controlled by graziers and used for livestock production with the majority of this utilised for beef production. This makes graziers[2] an important group for natural resource management outcomes. Although most agricultural land in Queensland is leased from government either by individuals or pastoral companies, it is the individual or company manager who makes the day-to-day decisions about land management practices. For this reason it is private graziers and company managers who are targeted in this study. In addition, despite the large quantity of work that has been conducted with farmers, and the large volume of literature on sustainable development, little is known about graziers' perceptions of sustainable development.

The research that has been conducted with farmers and those who work with them suggests that valuable insights for developing pathways to sustainable development in Queensland may be revealed through further investigation of this group, from a social science perspective. It has been found that groups of people perceive things differently and the varying perceptions

[2] Graziers (and pastoralists) are defined as those who graze livestock on land, whereas farmers are those who farm the land by planting and harvesting crops. However, the terms 'farmer', 'primary producer' and 'producer' are typically used generically to describe a person who conducts any of these activities. This study is about graziers, but much of the literature I refer to does not discriminate between farmers and graziers and uses the generic term 'farmer'. Consistent with this practice, when I wish to refer generally to farmers and graziers I use the term 'farmer'. Similarly, although agricultural production and agriculture include livestock and cropping, these different activities are usually subsumed under the term 'agriculture'.

have the potential to create communication barriers (Abel, Ross & Walker 1998; MacLeod & Taylor 1992). When Abel, Ross and Walker (1998) compared the mental models of grazing landscapes of graziers, extension officers and bio-physical researchers, they found that they noticed different aspects of the landscape. The graziers' focus was 'management', compared with the extension officers, who did not exhibit a preference; and some of the researchers, had a tendency to prefer 'soils'. The different groups thus focused on different aspects of the landscape (Abel et al. 1998). In a study examining the perceptions of members of groups with an interest in beef cattle grazing systems in the Queensland rangelands, a large degree of divergence between the groups was found (MacLeod & Taylor 1992). The differences were in the perceived goal of grazing management, the sustainability of present grazing systems, the nature and extent of land degradation and its causes and the feasibility of rectifying existing degradation. The groups represented were graziers, extension officers, researchers, agricultural consultants, bank managers, stock and station agents, and environmentalists. These findings are important because they demonstrate that those who influence policy development – for example extension officers and scientists – have different perceptions to those who are implementing the resulting policy – in this case, graziers. In reviewing sustainable natural resource development in the Australian rangelands, the Centre for International Economics (CIE 2000, p. 24) states, 'We know very little about the people who are on the end of government policies, regulations and other institutional interventions in the rangelands'.

A central issue of sustainable development is attempting to develop in an environmentally appropriate way; however, the literature suggests this is a challenge Queensland farmers have not met, with economic issues potentially contributing to this. What is absent from the literature just reported is how graziers interpreted sustainable development, and what they perceived the incentives and barriers to sustainable development to be.

Study aim

The aim of this study, therefore, is to gain an in-depth understanding of graziers' perceptions of sustainable development. Following are the research questions that will be answered in Chapter 7.

1. How do graziers in this study interpret sustainable development? This includes developing an understanding of the social, economic and environmental factors that influence their interpretation.
2. What are the implications of this interpretation for progressing sustainable development?

As the major land use in Queensland is beef grazing, this was an ideal location to study graziers' perceptions of sustainable development. As a student of the Cooperative Research Centre for Tropical Savannas Management Centre I was obliged to conduct the work in the tropical savannas. The major land use here is beef grazing so this was an appropriate location for the study (TS CRC 2005a, 2005b).

Several factors suggested that an interpretative exploratory study would be appropriate. As reported there was limited information available about graziers' perceptions of sustainable development so this suggested that an exploratory study was needed. The research has found that different interpretations were made about similar concepts and identical landscapes, and these differences created communication difficulties. This suggested that a qualitative approach would be most appropriate. It appeared that if methods such as a questionnaire or structured interviews were used, there was the potential for misunderstandings to occur with interpretation. In addition, for an integrated understanding to be developed it was necessary to choose methods that would capture the context from which the participants were answering, which is not a strength of quantitative approaches. The goal of understanding from the participants' perspective suggested an interpretive approach would be appropriate. For these reasons, in-depth unstructured interviews were the primary data collection method, complemented by participant observation and a brief questionnaire. This research design was selected to provide rich description and a contextualised account of graziers' perceptions of sustainable development. The addition, the brief questionnaire was to collect basic socio-demographic and property information as background material. With a view to comparison, two locations were selected in a case study – one in the Gulf of Carpentaria and the other in the Central West (see Chapter 3 for locations).

Thesis structure

In this chapter, I have provided a rationale for the study through an overview of the drivers of sustainable development in agriculture in Australia and the challenges it confronts. This

identified a gap in knowledge that is of fundamental importance if we are to progress towards sustainable development. Two research questions are posed to respond to this and the results chapters and discussion are structured around answering these questions.

Chapter 2, the literature review, sets the context of the thesis with a review of the history and context of sustainable development. This is followed by a description of sustainable development and some of the issues that surround it. The central debates relevant to this thesis are identified, then Australia's approach to sustainable development is presented. The next section of this chapter describes the broader influences on Australian agriculture by examining the major adjustment forces of the declining terms of trade and globalisation on farming in the late twentieth century. This contributes to understanding what the continuing structural influences on the agricultural sector and farmers have been. The need for environmental protection in Australia and what has occurred is then described. Following this broad view, I focus on the social component of farming and rural life by examining both the enduring beliefs about farming and changing values about rural land use. The implications for sustainable development from this history are then considered.

The research design and its rationale are explained in Chapter 3. The justification for an interpretative approach with this exploratory study is provided, and the grounds for this choice of methods, are discussed. The sample selection and rationale for this is provided, along with a description of the geographical locations where the work took place. The basis for the inductive approach to data analysis and resulting thematic account are provided. The strategies used to enhance the trustworthiness of the conclusions that are drawn from the data, are given.

Chapters 4 to 6 detail the results of the study: the social, economic and environmental influences on graziers' perceptions of sustainable development. Chapter 4 outlines the elements of the grazing way of life. It highlights the importance of the social component of farming to these graziers. Chapter 5 describes the context within which graziers operate, and explores the challenges they confront as graziers in the early twenty-first century. The geographical, business and social constraints that these graziers identified reflect well-known problems in the agricultural sector. The challenges they face represent some familiar and some little-explored changes in these parts of rural Australia. Chapter 6 gives an account of how these graziers run their grazing operations. It describes the range of business strategies

that they use, how they care for their land or fail to do so, and describes their approach to improving their product, which is livestock.

In Chapter 7, initially I review the differences between the study locations, and between private graziers and company managers. Graziers' interpretations of sustainable development are then described. These are the key social, economic and environmental factors they identified as hindering or promoting their ability to meet their needs now or their children's ability to meet theirs in the future. The implications of this interpretation for sustainable development are then discussed.

Conclusions about the study are drawn in Chapter 8 by reflecting on the aim of the study, the rationale, the methodological approach and the major findings. This is framed around the contribution to knowledge the study makes. Then the limitations of this study are acknowledged and directions for future research are suggested.

Chapter 2: Literature review

Introduction

I have selected from a diverse range of literature to review research that assists in understanding the topic of graziers' perceptions of sustainable development. Initially, I review the concept of sustainable development through examining the historical origins of the concept, the context in which it emerged and how it is defined. This includes outlining the debates of relevance to this thesis, and Australia's position on sustainable development. This approach to reviewing sustainable development positions the thesis, and provides a basis on which to consider Queensland graziers' perceptions of sustainable development.

A body of literature central to this thesis examines the structural change in Australian agriculture that has occurred in the late twentieth and early twenty-first centuries. Global influences have driven many of these changes and this has impacted on agriculture because it has primarily been an export industry. There has been ongoing state intervention in agriculture, initially because of its importance to the national economy for much of the twentieth century, then because of the environmental impacts it created. This literature on structural change contributes to this thesis in several ways. It outlines the impact of global influences on agriculture and examines how the Australian government has dealt with these changes. It shows how this has shaped the context within which today's graziers operate and highlights the need for sustainable development to occur in the future.

Parts of several bodies of literature are examined to provide an understanding of the social component of farming and changing values about rural land use. This work shows that despite some long-standing beliefs about the value of farming and farmers, challenges are now emerging to agriculture's status as the primary or only use of rural land. A related area of work examines the goals and values of farmers. The combination of these bodies of literature provides insights into the non-economic dimensions of farming.

The final area of the review examines the implications for sustainable development from this set of circumstances. This focuses on the economic and environmental dimensions of sustainable development and highlights points from the literature relevant to this study of graziers' perceptions of sustainable development.

Sustainable development

History and context

The roots of sustainable development are ancient but the term is comparatively recent in origin (Estes 1993). Agriculture also has a long history. It dates back to 8000 BC (Montmarquet 1989, p. 2). A question that links these two items is the topic of this thesis. What are Queensland graziers' perceptions of sustainable development in the early twenty-first century? The origins of sustainable development and the issues that surround it are reviewed to provide a context and direction for the later discussion of graziers' perceptions of sustainable development.

The philosophical foundations of sustainable development can be found in the works of Dante, Kant and Rosseau, in ancient paganism and in the practices of indigenous peoples (Estes 1993). It is associated with the Age of Enlightenment (Redclift 1994), when human reason was used to determine social practices rather than more traditional modes of social organisation (Jary & Jary 1991). Reid (1995, p. xv) claims that the concept is 'rooted in perennial themes of responsibility to others, providing for the future and dependence on life on the natural environment … [which have existed] since time immemorial'. The notion of sustainable development evolved from concerns about environmental and development issues in the decades preceding the Brundtland report (WCED 1987), and which are now explored.

The rise of environmentalism in the 1960s fuelled a growing awareness of emerging environmental problems, some of which were occurring on a global scale (Adams 1990; Beder 1993; Redclift 2001). Although the environment movement was based in industrialised countries the concerns raised were about global issues such as pollution and the impact of the increasing population (Redclift 2001). Concerns were held that population growth would outstrip the planet's ability to provide food (Adams 1990). The awareness that environmental systems were influenced by, and interacting with, human systems was influenced by the 'limits to growth' debates in the 1970s which had an economic development focus (Redclift 2001). The debate was sparked by a claim, based on the modelling of demand and growth that the limits to the planet's capacity to produce food and non-renewal resources would be reached and there would be a 'sudden and uncontrollable decline in both population and industrial capacity' (Meadows et al. 1972, p. 23). The resource-intensive approach to development being taken by Western industrialised countries was predicted to ultimately

create a global crisis (Redclift & Sage 1994). A key point of Meadows et al.'s (1972) claim was the assumption that resources were finite. This assumption was challenged by their opponents because it ruled out recycling and the future discovery of resources. By extension, this challenged the capacity and efficiency of future technical change to prevent a global crisis from occurring (Ekins 1993).

The developed countries were reliant on the demand from developing countries for their continued economic growth (Redclift 2001). Environmental degradation in the developed countries resulted from the use of agro-chemicals such as nitrogen, which polluted water courses (Pearce 1993). However, many people in developing countries were living in absolute poverty, and this caused environmental degradation because their only option for short-term survival was to exploit resources (Lele 1991). Issues about human development, which focused on the disparities between the developed and developing countries, were highlighted by the Brandt Commission, where poverty and the related inequalities were seen as a by-product of economic growth (Brandt Commission 1983).

The association was made between rapid economic growth, global environmental degradation and poverty on a global scale. These issues, combined with the fear of an impending global crisis, provided the context for the Brundtland report (WCED 1987).

What is sustainable development?

The Brundtland report (WCED 1987) is responsible for the term 'sustainable development' gaining prominence. It is typically identified as the first international recognition that sustainable development was an issue. However, this was preceded by several international events. The most significant of these was the United Nations Conference on the Human Environment in Stockholm in 1972 which signalled the emergence of global environmental concern (Adams 1990). The Brundtland report was compiled by political representatives from more than 20 countries in response to a global environmental crisis resulting from unprecedented growth in the late twentieth century (WCED 1987). Agenda 21 of the Rio Earth Summit in 1992 (Robinson 1992), which was to report on the changes recommended by the Brundtland report, confirmed the international status of sustainable development (McManus 1996). The definition of sustainable development in the Brundtland report is 'to meet the needs of the present [generation] without compromising the ability of future generations to meet their own needs' (WCED 1987, p. 8). This is the definition with which I

have worked in this thesis. It recognises the interdependence of the social, economic and environmental dimensions, within (intragenerational) and between (intergenerational) generations (Estes 1993; WCED 1987). The ideal is to achieve integration and sufficient balance between these three dimensions to allow development to continue indefinitely (WCED 1987). Focus on one to the neglect of the others will lead to non-sustainability (WCED 1987).

Even though it has been described as an idea whose time has come, the major achievement of the term ‘sustainable development’, has been the bringing together of what previously had been parallel and sometimes conflicting dialogues; environmental quality and economic development. Despite the broad acceptance of the need for sustainable development, there are inherent contradictions in bringing together the economic, environmental and social dimensions of sustainable development (Dovers & Handmer 1993). These contradictions are at the centre of many of the debates about sustainable development. Those relevant to this thesis are now discussed.

Two principles underpin sustainable development: intergenerational equity and intragenerational equity (WCED 1987). Intergenerational equity refers to future generations not being left worse off than the current generation (WCED 1987). Intragenerational equity is where all members of the current generation should be able to meet their needs (WCED 1987). This is about equity and justice. There is emphasis on providing for the least advantaged in society (Turner, Pearce & Bateman 1993). Equity, based on social justice, means equal access to community resources and opportunities, and that no individuals or groups should carry a greater environmental burden than others as a result of government actions (Beder 1993). It is about fairness in the distribution of benefits or losses, and the entitlement of all to an acceptable quality and standard of living (Becker, Jahn & Stiess 1999). Intergenerational and intragenerational equity were considered to be an ethical responsibility; however inequality here was also a cause of non-sustainability (Lele 1991). This introduced the concept of need and its measurement, one of the contentious areas in the sustainable development discourse (Dovers & Handmer 1993). Central to the debate is that needs vary across populations and over time (Turner 1993). This presents the matter of competing needs, and how they can be met equitably (Harding 1998). The addition of this social dimension to the existing economic and environmental considerations introduced a moral or normative element (Becker, Jahn & Stiess 1999). The broader issue of how sustainable development and

its components can be measured and monitored has been of continuing interest (Drummond & Marsden 1999).

How development might occur is another of the debates in the discourse (Adams 1990; Ekins 1993). Can constructed capital (previously known as man-made capital) replace natural capital? This debate was grounded in Meadows et al.'s (1972) assumption that resources were finite, and the notion of equity. Natural capital is compromised of environmental assets such as soil, forest, wildlife and water (Pearce, Markandya & Barbier 1989). Constructed capital comprises such things as roads, buildings, machinery, computers and the outputs of human intelligence (Beder 1993; Pearce, Markandya & Barbier 1989). Capital, whether natural or constructed provides the capacity to generate well-being through the production of goods and services (Pearce 1993). One component of the debate, raised by economists such as Daly and Cobb (1989), is about the substitutability of constructed capital for natural capital. The second component concerns whether or not it is equitable for one generation to reduce the stocks of natural capital through substituting constructed capital (Beckerman 1994). Proponents of 'strong' sustainability argue that natural capital cannot be replaced (Pearce 1993). The 'weak' position is that constructed capital can replace natural capital. Therefore it is equitable to reduce the stock of natural capital because future generations will be compensated through the generation of constructed capital (Beckerman 1994; Dovers & Handmer 1993; Pearce 1993). Australian policy has been described as taking the 'weak' approach to sustainability (Stoneham et al. 2003).

One of the changes that occurred when these three concepts were brought together was the idea that economic growth and environmental quality may be compatible (Lele 1991; Turner 1993). Previously they were viewed as incompatible, where advancing one required compromising the other (Pearce 2008). However, Pearce, Markandya and Barbier (1989) argue that at times economic growth does mean sacrificing environmental quality, so the change is one of focus, where the tradeoff reflects the value of the environmental loss. This demonstrates a pendulum swing consistent with changing public attitudes (Pearce, Markandya & Barbier 1989). An issue of great concern for developed countries was that economic development would be impaired by the requirements of environmental protection (Adams 1990). Their concern was that the costs of environmental protection could lead to a lack of competitiveness – but so too can environmental degradation (Beder 1993; NLWRA 2002).

One issue that arose around the environment was that the economic benefits provided by natural environments were not costed (Ekins 2000). An economic benefit may be the contribution to well-being or the standard of living (Pearce, Markandya & Barbier 1989). The lack of 'value' attributed to the economic benefits of the environment has contributed to environmental degradation (Pearce, Markandya & Barbier 1989). The costs of the degradation are referred to as externalities, because they operate outside the market system (Beder 1993). An example of an externality is where large-scale tree clearing causes salinity. Those who benefit from the tree clearing by increased production are not paying for the cost to the environment of reduced ground water capacity and loss of soil quality. A related issue is that many natural environments are common-pool resources, such as parts of the oceans and some land, and these 'public goods' are at risk of over-use, as in the tragedy of the commons (Hardin 1971; Lele 1991).

Initially, the goal of social sustainability was raising the level of real income per capita, which was measured by Gross National Product per person; however, this changed to the quality of life, health of the population, educational standards and general social well-being when the deficiencies of the former measure were realised (Beder 1993; Pearce, Markandya & Barbier 1989). An example of a measure of social sustainability is the United Nations' Human Development Index, which considers literacy, life expectancy and Gross Domestic Product (Pearce 1993).

The strengths and weaknesses of the concept and the definition itself were debated (Drummond & Marsden 1999). The broad definition of sustainable development given in the Brundtland report brought together a broad range of often-competing ideologies, disciplines and sectors (Dovers & Handmer 1993; Drummond & Marsden 1999; Harding 1998; Redclift 1991). Inherent in the achievement of bringing parallel dialogues together was a fundamental weakness. Sustainable development attempts to balance the interests of traditionally contrasting stakeholder groups – business and conservation (Wilbanks 1994) – but claims have been made that it is defined in a way that is consistent with what the stakeholder or individual is advocating (Pearce, Markandya & Barbier 1989). The ambiguity of the concept has therefore allowed its misappropriation (Drummond & Marsden 1999).

However, the breadth and ambiguity of the definition contributed to its appeal: many could identify with it (Drummond & Marsden 1999; McManus 1996; Pretty 1995; Wilbanks 1994).

This resulted in many definitions and approaches. For example McManus (1996) reports nine different approaches to sustainable development and Pearce, Markandya and Barbier (1989) listed 24 definitions of sustainable development.

An early issue was whether sustainable development was a process or a goal, and a related debate is whether the terms 'sustainable development' and 'sustainability' can be used interchangeably. Redclift (1991) argues that the Brundtland report definition identifies sustainable development as an objective or goal, as do others (Wilbanks 1994); however, other writers (Dovers & Handmer 1993; Harding 1998) argue that sustainability or continuance is the goal, with sustainable development being the process of how this will be achieved. The implication is that the terms cannot be used interchangeably because of the different meanings, but Wilbanks (1994) argues that, because both focus on the central issue – which is continuity – they can be used interchangeably. In this thesis, I concur with Redclift (1991) by defining sustainable development as a goal. This decision is consistent with the goal statement of Australia's National Strategy for Ecologically Sustainable Development (NSESD), which is 'Development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends'. The NSESD (DEH 1992, p. 2) has a clear goal which is to improve the 'total quality of life'. The process in this goal statement is how development is conducted. Unless stated otherwise, in this thesis mention of sustainable development will reference the goal of sustainable development, not the national strategy.

In summary, sustainable development is about continuity, balance and equity. It is dynamic and therefore changes over time and it varies across geographical locations (Wilbanks 1994). The breadth of the definition of sustainable development in the Brundtland report created ambiguity, and joining parallel dialogues and the introduction of normative concepts created debate. The Australian response to the arrival of sustainable development on the global horizon is now explored.

Australia's approach – Ecologically sustainable development

The Australian response to issues raised by the Brundtland report was the introduction of the National Strategy for Ecologically Sustainable Development (NSESD) in 1992 (DEH 1992). This reflected a broader global awareness of the need for sustainable development. This was fuelled by increasing levels of environmental awareness in Australia (Cullen, Williams &

Curtis 2003; Doyle & McEachern 1998; Hutton & Connors 1999) and a recognition of the implications of significant and long-term environmental degradation in Australia (Woodhill 1999). Most approaches to sustainable development favour one of the three dimensions (Drummond & Marsden 1999), and the Australian NSESD is an example of this. The goal of the NSESD, as stated, is 'development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends' (DEH 1992, p. 2). It focuses on the environmental aspects of sustainable development outlined in the Brundtland report (WCED 1987). The definition of ecologically sustainable development that Australia adopted is:

> … using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained and the total quality of life, now and in the future, can be increased (DEH 1992, p. 8).

This definition and the goal of the NSESD give a stronger emphasis to the environment, and development within ecological limits, than the economic or social dimensions of sustainable development. This approach is best described as ecocentric (Scott, Park & Cocklin 2000) and it is often equated with biodiversity conservation.

The three core objectives of the NSESD are:

1. To enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations;
2. to provide for equity within and between generations; and
3. to protect biological diversity and maintain essential ecological processes and life-support systems (DEH 1992, p. 8)

Consistent with the NSESD, Commonwealth and state governments created policies and legislation directed at sustainable development but with a focus on biophysical issues (Tonts 2005). The *Environmental Protection and Biodiversity Conservation Act 1999* which is Australia's central piece of environmental legislation has an even stronger ecological approach than the NSESD.

The Australian emphasis on ecologically sustainable development was influenced by the environmental concerns that were emerging at the time the policy was developed. This area of concern has in turn shaped the policies that have followed. The ecological dominance has

continued. The next section of the literature review considers the economic forces on Australian agriculture. This highlights the declining economic fortunes for farmers and how the government sought to decrease further environmental degradation through changing land management practices.

Structural change in Australian agriculture

There were two major adjustment forces on farming in the late twentieth century relevant to this thesis: declining terms of trade and globalisation. These forces contributed to environmental degradation so indirectly became a driver for a sustainable development policy. These adjustment forces are outlined below, followed by a description of how these significant and ongoing changes have impacted on agriculture and how the Australian government sought to manage them. The final part of this section explains how, in the late twentieth century, government attempted to use social measures to address environmental degradation.

Australia's dependence on export markets for primary produce has ensured continued vulnerability in the agricultural sector to changes in the world economy (Gray & Lawrence 2001). Consequently, government intervention to support agriculture commenced with Federation (Reeve et al. 2001). Family farms were established from the mid-nineteenth century to realise state agricultural policies and to promote closer settlement (Lees 1997a; Lloyd & Malcolm 1997). An assumption that underlaid many of these policies was that the expansion of agriculture and closer settlement would produce prosperity for the country (Cameron 2005; Reeve 2001b). The state was therefore responsive to farmers' problems, and policies were created to provide assistance to farmers during difficult periods (Bell & Pandey 1997).

Declining terms of trade

Despite this early support, the declining terms of trade for farm products since the 1950s have had a significant impact (Lawrence 1987, p. 28). Notwithstanding of the growth in agriculture to meet demand after World War II, a balance of payments problem occurred in the 1950s due to the import of manufactured goods (Higgins & Lockie 2001, p. 180). This resulted in government encouraging increased export-oriented agricultural output through taxation concessions and subsidisation (Lawrence 1987). The success of this response, coupled with global over-production and the development of regional trading blocks (Vanclay & Lawrence

1995), resulted in over-supplied markets and lower prices. In the 1960s, it became apparent that, despite government assistance, the rising costs of production in conjunction with the lower prices were creating declining terms of trade, or a cost-price squeeze for many farmers (Higgins & Lockie 2001, p. 182). To maintain their incomes, those who stayed in farming, had to increase their productivity by expanding the size of their holdings and increasing the intensity of production (Higgins & Lockie 2001). The declining terms of trade created significant economic challenges for many in the grazing industry.

Globalisation

The second significant influence on Australian farmers was globalisation, which emerged in the mid-1970s (McMichael & Lawrence 2001, p. 154). Macro level changes, broadly described as globalisation have changed the economic basis of society and created a range of social impacts for rural communities (Bourke 2001b). Globalisation is a multi-dimensional phenomenon involving 'economic, political, technological, military, legal, cultural and environmental' dimensions (Held 1996, p. 340). The defining characteristics are a global mentality where the world is conceived of as a single unit, with 'new forms of political, economic and social organisation that … invest power in entities … increasingly abstracted from national … settings' and the use of advanced technologies for transactions, global connections, knowledge creation and transfers (Woods 2004, p. 4). In the economic domain, transnational corporations are considered to be the most powerful actors because of their ability to move capital around the world to compete in what is now a global marketplace by, for example, minimising their labour costs (Gray & Lawrence 2001). To a large degree, transnational corporations can determine what foods are produced by whom, and when, because farming and the manufacturing and service industries are linked through contractual arrangements creating a global food system (Gray & Lawrence 2001). An important element of globalisation is neoliberalism, which is associated with 'individual freedom, the sanctity of the marketplace, and minimal government involvement in economic matters' (Gray & Lawrence 2001, p. 18). To some degree, this has forced countries like Australia to focus on global rather than national economic relations (McMichael & Lawrence 2001).

Deregulation and structural adjustment

The government response to the ongoing process of globalisation was the adoption of economic rationalism underlaid by neoliberalism, which became apparent in policy by the 1980s (Pusey 1991, p. 4). This emphasises 'economic growth, the pursuit of economies of

size, rationalisation, technology, efficiency, comparative advantage, deregulation and the free market' (Bell & Pandey 1997, p. 235) with the goal of improving Australia's competitiveness, which would restore economic growth and social well-being (Pritchard 2000, p. 92; Tonts 2000, p. 140). Under this approach, policy development occurs predominantly within an economic paradigm, resting on the belief that free markets will provide the best outcome and that the decisions of individuals are rational, or in their best interests. This economic rationalist approach continues to evolve in response to broader international influences.

Economic rationalism involved significant changes for the agricultural sector. The deregulation of agriculture, which included the removal of tariffs and subsidies, dismantling statutory marketing schemes and the privatisation of government services such as infrastructure, got underway in the 1970s and continued for the next three decades (Cockfield & Botterill 2006, p. 79; Pritchard 2000, p. 92; Tonts & Jones 1996, p. 140). This exposed farmers to the international marketplace (Wright & Kaine 1997), with 99 percent of these farms being family owned and operated (Hooper et al. 2002, p. 495). In addition, agriculture's contribution to the Gross Domestic Product decreased from 30 percent in 1950-51 to 3.7 percent in 2001 (ABS 2005b, p. 428). The decrease in agriculture's contribution to exports was more significant. Agricultural products contributed more than 80 percent of the value of Australian exports until the late 1950s, but this had decreased to 9 percent by 2002 (ABS 2005a, p. 437). Agriculture was no longer making a significant contribution to the national economy.

Deregulation in agriculture coupled with a structural adjustment policy represented a new direction for government's treatment of farmers. The purpose of the Rural Reconstruction Scheme, which commenced in 1971, was to assist farmers struggling to adjust to the changes to pursue economies of scale or move out of agriculture (Higgins & Lockie 2001, p. 182). This scheme was replaced by the Rural Adjustment Scheme in 1977 (Botterill 2000b, p. 1), and has continued in various forms (Argent 2002). The focus changed from assistance being provided to those experiencing difficulty to assistance being provided to those with prospects of long-term viability; at the same time the welfare provisions were retained (Cockfield & Botterill 2006). Farmers were to increase their productivity and become more self-reliant (Higgins & Lockie 2001). This approach was consistent with globalisation on the international front, and a decline in the national financial importance of agriculture.

From the 1980s, adjustment policy and reviews identified the necessity for farmers – particularly small family farmers – to develop business skills to assist them to increase their efficiency and productivity (Cockfield & Botterill 2006, p. 75; Tanewski, Romano & Smyrnois 2000, p. 6). 'Farming was no longer to be a lifestyle' (Higgins & Lockie 2001, p. 184). In the mid-term review of the Rural Adjustment Scheme, enterprise management skills were identified as a central issue for profitability and on a recommendation from the review (McColl, Donald & Shearer 1997), the Farm Business Improvement Scheme (FarmBis) was set up. The purpose was to fund training in farm business management, which included property management planning, to assist farmers to access the necessary information with which to make effective management decisions to run their business in what had become an increasingly complex environment (McColl, Donald & Shearer 1997).

Environmental protection

Environmental degradation is a significant problem in Australia as discussed in Chapter 1. As noted earlier in this chapter, the introduction of the National Strategy for Ecologically Sustainable Development in 1992 (DEH 1992) was Australia's contribution to the growing international importance of sustainable development. The policy focuses on the environmental aspects of sustainable development outlined in the Brundtland report (WCED 1987). Commonwealth and state governments have since created policy and legislation directed at environmental sustainability. Apart from the pre-existing and enhanced regulatory approach there has been a significant and ongoing social approaches to reduce environmental degradation. This is the topic of this section of the chapter.

The general public has increasingly identified a need for primary industries to adopt environmentally sustainable management practices (Carr 1994; Cocklin, Dibden & Mautner 2003) and in the agricultural sector there are increasing levels of awareness of the importance of the environment (Barr & Cary 1992; Bellett 1990; Brunckhorst & Coop 1999; Dovers 2000; Dryzek 1997; Lockie, Higgins & Lawrence 2001). The intention of the policy and legislation has been to correct the land management practices of the past promoted by government to increase production, but which contributed to the degradation of much of the Australian landscape (Barr & Cary 1992; Vanclay & Lawrence 1995). A series of programs aimed at improving environmental management, particularly by farmers, has been implemented. The Decade of Landcare was the forerunner of group-based programs (Toyne & Farley 2000). Prior to its introduction, extension had been the primary tool for scientists to

educate farmers. Extension, which in the 1960s had a production focus, moved to a basis of environmental or public good benefits in the 1980s (Barr & Cary 2000, p. 7). With increased awareness of the importance of protecting the environment, the focus was on production that was more environmentally sensitive (Barr & Cary 2000). Given the shift from the ideal of private benefit to that of public good, advice from extension officers to individuals was no longer considered an appropriate use of public funds (Barr & Cary 2000). This contributed to the move from one-to-one extension to group processes. In addition, the extension profession believed that groups such as Landcare were an effective approach to facilitating knowledge transfer between farmers (Barr & Cary 2000).

Landcare had the primary goal of 'increasing awareness of land management and providing educational and extension support for sustainable land management' (CIE 1997, p. 29). Ultimately the intention was to achieve a more sustainable use of Australia's farming land (Curtis 1997), by changing community norms through the use of groups rather than directly changing the behaviour of individual land management practices (Fenton, MacGregor & Cary 2000). The ideal was for local communities to generate their own solutions to local and regional problems with the belief that when communities 'own' their problems they will find their own solutions (Fisher 1999).

The broad goal of raising awareness has created confusion and made evaluation of Landcare problematic (Cary & Webb 2000; Lockie 1997). However, this social approach to changing the land management practices of farmers has been hailed as a success (Cullen, Williams & Curtis 2003; Curtis & De Lacy 1996; Lockie 1997; Tonts 2005), despite 65 to 70 percent of farmers not being involved (Wilson 2004, p. 477). Landcare has been credited with contributing to increased awareness of environment issues and improved land management practices (Cary & Webb 2000; Curtis & De Lacy 1996; Davenport 1997). Landcare has also been described as a way to pass responsibility for rural environmental problems to locals (Martin & Woodhill 1995) and to promote intensified production (Lockie 1998).

More recently, there has been a shift from local community-based activities such as Landcare to regionally-based partnerships between community and government (Cocklin, Dibden & Mautner 2006), which reflects a worldwide change towards macro-level policies aimed at influencing at the micro level (Bellamy 1999). Integrated Catchment Management is one of these. It includes an array of groups that are defined by a geographical catchment, and seeks

to integrate community involvement, technical knowledge, organisational structure and policy objectives with a goal of 'partnerships between government, community, industry and individuals' (Bellamy et al. 2002, p. 1). Regional planning is a similar approach, which often contains several catchments and many communities. The regional approach was formalised by the Council of Australian Governments (COAG) in 2000 when the Council endorsed a national action plan to address salinity and water quality to be implemented on a regional basis (Keogh, Frazer & Chant 2006). This approach was continued under the *Caring for our Country* initiative (Australian Government 2008a).

In summary, the major impacts on Australian farmers in the late twentieth century were economic, and were determined by global forces. It was these forces that contributed to environmental degradation. The knowledge that farming practices, which were driven by the economic importance of the agricultural sector, contributed substantially to environmental degradation is a factor that promoted the ecologically sustainable development focus in national policy. If the cost-price squeeze continues as predicted (DAFF 2005), and the current government response continues, the challenges that these impacts have created may continue. The next section of the chapter examines the social component of farming and the changing values about rural land use, which contributes indirectly to understanding graziers' perceptions of sustainable development.

The social component of farming and values about rural land use

The previous two sections of the literature review have considered environmental and economic dimensions. This reflects the emphasis of sustainable development in Australia. In order to understand graziers' perceptions of sustainable development, it is necessary to explore the social component of farming. In order to do this, I initially review agrarianism, which is a set of beliefs about the inherent value of farming and farmers that reaches back to the distance past (Montmarquet 1989). This shows that beliefs about farming have been consistent over time, and have persisted for thousands of years. It is because these beliefs were embedded in Australian colonial policy (Lees 1997a), and persist in policy (Cockfield & Botterill 2006), that this topic – and, more broadly, the value that farming has for farmers – needs to be reviewed. However, in Australia as elsewhere, the dominance of agriculture has decreased and is being challenged by other values about rural land use (Holmes 2002; Wilson 2001).

These combined literatures describe the social component of farming and the changing values about rural land use. These changes represent a third, and the most recent force, to put pressure on Australian farmers. An exploration of the social component of farming contributes to a study of sustainable development by providing an understanding of the role of farming in the lives of farmers and in rural communities.

Agrarianism

This concept, which originated in antiquity (Bunce 1994; Montmarquet 1989), has persisted throughout the ages with a revival in the eighteenth century (Bunce 1994; Williams 1973). It became a focus of research interest in the 1970s, particularly in the United States with attempts to understand the impact of structural change on the family farm (Friedland 2001, p. 11). Concerns were held that the family farm, an American, icon would disappear.

The two primary elements of agrarianism are the provision of food from the land and the associated ennobling way of life, which promotes the belief that farmers and farming are inherently important and worthy (Halpin & Martin 1996; Montmarquet 1989). The way of life promotes the virtues of 'justice, honesty, independence, courage and a capacity for hard work' (Montmarquet 1989, p. 26), where 'prudence and effort are seen as primary virtues' (Williams 1973, p. 14). These are attributes required to live well, though not necessarily to prosper, so it was considered a noble way of life (Montmarquet 1989).

The eighteenth century revival of agrarianism occurred simultaneously in England and North America at the time Australia was being settled (Craig & Phillips 1983). The family farm became the foundation of American society through Jefferson's agrarian ideology, which positioned the yeoman farmer as the backbone of society (Bunce 1994). It was entrenched in American culture (Lees 1997a) by the pioneer myth of the 'hard-working and frugal settler carving a living out of the wilderness' (Bunce 1994, p. 31), an ideal which resonates with Australia's bushman and pioneer legends (Hirst 1992; Lees 1997a; Poiner 1990).

The European settlement of Australia reflects predominantly North American influences where land was released in small parcels, with squatting, speculation and settlement following frontier advance (Dovers 1992; Lees 1997a). The practice of squatting, though discouraged (Bell & Pandey 1997), was very common and is the foundation of the Australian grazing industry (Craig & Phillips 1983; Lees 1997a). The Australian bushman is attributed the

virtues of ‘independence, self-reliance, individualism, fairness, belittling one’s own achievements, and the acceptance of others as equals’ who through their ‘hard work, built the foundations of a Nation’ (Lees 1997a, p. 9).

In nineteenth century Australia, legislation was passed for the purpose of increasing agricultural production by allowing small holders to select land (Higgins & Lockie 2001; Johnston 1982). This reflects the English yeoman notion of family farms supplying the agricultural needs of the community (Cameron 2005; Poiner 1990) and becoming ‘the moral backbone of the future society’ (Reeve 2001b, p. 5). The difficult conditions, small acreages, low productivity and lack of experience of these yeoman farmers resulted in many failures, and created the opportunity for amalgamation into larger holdings which became the pattern of land development and ownership in Australia (Lees 1997a; Poiner 1990).

Australia’s reliance on rural exports made its economic and social vitality sufficiently important to be supported by the state (Davison 2005), which engendered the belief that, because the fortunes of the nation were linked to agriculture, it was necessary to take care of farmers (Aitkin 1985; Lees 1997a). The purpose of the closer settlement schemes in the twentieth century was to increase agricultural production because of food shortages following World War II and for export (Argent 2002). The yeoman ideal and squatting created the foundations for the pioneer and bushman legends in Australia, and a century of closer settlement schemes entrenched the notions of agrarianism (Green 2001).

The persistence of these beliefs about agrarianism has been attributed to its chameleon-like ability to adapt to changing needs and places (Little & Austin 1996; Poiner 1990; Short 1991). This occurs through adapting the basic tenets to changing times and needs through the selective reframing of change, and it can occur because the concept is sufficiently abstract (Buttel & Flinn 1975; Poiner 1990).

Another explanation for such persistence is termed ‘agrarianism as a refuge’ (Singer & De Sousa 1983, p. 293), which argues that agrarian values are a psychological defence against difficulties. It is claimed that farmers use agrarian ideology to rationalise the humiliation engendered by the insecurity and poverty which farming often brings (Craig & Phillips 1983), to balance the disadvantages and dampen the harsher realities of the lifestyle such as the isolation, loneliness, hard work and drought (Poiner 1990), or ‘translate their ability to survive

hardships into virtues of rural living' (Flinn & Johnson 1974, p. 200). Craig and Phillips (1983, p. 416) conclude that 'intangibles such as independence, natural beauty, and open-air life are valued above the actual economic existence of the farm family' as a psychological defence against their increasingly difficult financial circumstances. However, when investigating the role of agrarianism in sociopolitical life, Singa and De Sousa (1983) found no support for the 'agrarianism as a refuge' explanation.

The 'malleable' nature of agrarianism (Halpin & Martin 1996, p. 11), which allows exploitation by competing interest groups to advance their goals (Beus & Dunlap 1994; Buttel & Flinn 1975; Gray & Lawrence 2001), contributes to the persistence of these beliefs. Farmers have used the idea of agrarianism to contribute to their income security and to advocate for their interests (Gray & Phillips 2001; Wear 2000). Agricultural interest groups have used it to justify their positions and advance their goals (Beus & Dunlap 1994), and governments have used it to introduce policies that apparently promote but actually exploit and undermine, the small family farmer in favour of corporate farming (Beus & Dunlap 1994; Gray & Phillips 2001).

Despite being able to offer a range of reasons for the persistence of this set of beliefs, some authors seem unsatisfied with their own answers (see Craig & Phillips 1983), and at times seem perplexed by why, in their view, a group in society persists with an apparently unrewarding belief system and its associated behaviours. There is a contradiction between a set of beliefs which values farming and the way of life, and the challenges which would appear to make it increasingly unattractive. Research that has investigated agrarianism, farmers and rural life provides some insights. This is now explored.

The majority of research on agrarianism stems from Johnstone's (1940) seminal work where he identified the three tenets of agrarianism:

1. The independence of the farmer and farm family.
2. The belief that agriculture is the basic industry.
3. The idea that farming is the most natural and best life for people.

Flinn and Johnson (1974) developed these into five tenets of agrarianism and developed an index of agrarianism, and Buttel and Flinn (1975) developed a similar index. These measures,

parts of them and other measures have been used to measure a subscription to the ideology of agrarianism.

Following research using these indexes that suggested the concept of agrarianism was multidimensional (Carlson & McLeod 1978; Craig & Phillips 1983; Flinn & Johnson 1974; Molnar & Wu 1989), factors were found that reflected Johnstone's (1940) tenets (Beus & Dunlap 1994; Dalecki & Coughenour 1992). These studies each found four factors and they were similar. Both had factors concerning the inherent value of agriculture, the importance of family farming, the importance of economic independence for farmers and farming as a way of life. This body of research that spans more than 50 years demonstrates that the activity of farming and farmers themselves are valued by farmers and non-farmers alike (Buttel & Flinn 1975; Molnar & Wu 1989; Willits, Beler & Timbers 1990). The majority of the research on agrarianism based on Johnstone's (1940) tenets was conducted in the United States, but consistent results were found with Australian farmer samples (Craig & Phillips 1983; Halpin & Martin 1996).

Farmers' goals and preferences

Gasson's (1973) influential work measuring the goals and values of farmers that underpin decision-making found that farmers, particularly those with smaller farms, consistently showed a predominantly intrinsic orientation to work. They most valued the way of life, independence and performance of work tasks. One of the most highly valued aspects of farming was independence, with the ownership, management and labour resting with the one person (Gasson & Errington 1993). Davison (2005) reports that one reason for the satisfaction with farming life is its independence. Gasson and Errington (1993) claim that farming is unique compared with other types of businesses and that, although the majority of farms are family farms, is it not the family aspect of farming that makes it unique because farm managers and single farmers exhibit the same orientation as family farmers.

Australian studies based on Gasson's (1973) work reported results consistent with these findings (Cary & Holmes 1982; Holmes & Day 1995; Kerridge 1978). Kerridge (1978) found that those who valued the intrinsic aspect tended to have low incomes and debt, those who valued the instrumental aspects had large farms, and those who valued the expressive aspects had high incomes and debt, and large cropped areas.

In reviewing the farm management literature, Fairweather and Keating (1994) argue that farmers have either an economic or social and lifestyle preference, but typically these goals coexist. These two aspects have been found in the United states, Scotland and Australia. In the United states, Salamon and Davis-Brown (1986) found entrepreneurial and yeoman farmers in the corn belt. Smith (1982) found Yankee agrarianism, the goal of which is to increase farm production, and Southern agrarianism, which was about the moral excellence of the farming way of life. Bunce (1994) found progressive agrarianism, which refers to the need for the commercial success of family farmers, and fundamental agrarianism, which relates to the yeoman farmer ideal and the virtuous way of life. In Scotland, Austin et al. (1996) found yeoman and entrepreneur factors in their analysis of farmers. McGregor et al. (1996), who also investigated Scottish farmers, found that profit maximisation was usually one of the goals of farmers, but their way of life was more important. Following Austin et al. (1996), but with an Australian sample, Maybery, Crase and Gullifer (2005) found economic, conservation and lifestyle factors amongst the farmers' goals and objectives. The discovery of a third dimension may reflect the recency of the work; however there is a long history of links between environmentalism, agrarianism and spirituality developed by the transcendentalists, of which Emerson and Thoreau are the best-known examples (Bunce 1994). North America's contemporary agrarian Wendell Berry is said to combine the fundamentalist stream of agrarianism with Thoreau's spiritual attachment to nature (Bunce 1994; Montmarquet 1989).

Voyce (1997), in a study of New South Wales farmers, found one group which identified farming as a way of life and another which identified farming as a business. Bryant (1999b), who investigated occupational identities of South Australian farmers, found predominantly traditional and managerial occupational identity types. Traditional farmers understood farming as a way of life. They valued the tasks they undertook, they took pride in their work, and they received pleasure from doing it. Bryant (1999b) described them as living representations of agrarian ideology. Managerial types focused on the commercial outcomes of farming. In a study of New South Wales pastoralists who had experienced adjustment pressure, Webb, Cary and Geldens (2002) found that their pastoral identity and attachment to their land were the greatest barriers to leaving. The pastoral identity consisted of six themes: independence, physical labour, hard work and workload, pride, passing on a family tradition, differentiation between rural and town, and optimism and perseverance. In a study of drought in Queensland and New South Wales, Stehlik, Gray and Lawrence (1999) found that non-economic goals were valued.

Other research has found that farmers seek a balance between the social and economic dimensions, such as Burling (2000, p. 2), who found that woolgrowers in a Western Australian study sought a balance between income and their 'preferred lifestyle', and Barr and Cary (2000), who claim that many Australian farmers are motivated by a balance between the need for profit and a comfortable living. Gray and Phillips (2001) contend that it is because of the satisfaction with farming work that farmers choose to forego work that may return a higher income; they wish to continue their lifestyle and are attached to their land. Rickson (1999, p. 275) found that both organic and conventional farmers' 'expectations about their autonomy, social status and the value of their work are consistent with agrarian beliefs' and that the cultural significance of farm work was very strong in Australia and was the basis for farmer satisfaction – even in difficult economic conditions.

The social component of farming is well recognised. One aspect of agrarianism is the ennobling way of life that is associated with farming the land (Montmarquet 1989) and this has been immortalised in Australian culture in the bushman and pioneer legends (Hirst 1992; Lees 1997a; Poiner 1990). Research attempting to measure agrarianism found that it was not only farmers who considered their occupation to have a social value, but non-farmers also perceived this (Buttel & Flinn 1975; Molnar & Wu 1989; Willits, Beler & Timbers 1990). Internationally, research on what farmers value about farming has consistently found a combination of social and instrumental goals. Authors who sought to understand the priorities between the social and economic goals concluded that a balance was sought between them. However, preference appeared to be given to the social goal, which was about continuing their preferred lifestyle.

In summary, the literature shows that the non-economic value of farming has a long history, and that farming and farmers have social value within the farming community and the broader community. Although farmers consistently have been found to have social and economic goals, Australian researchers have concluded that the value of the economic returns is that they allow them to continue their preferred lifestyle. This has implications about how farmers may prioritise the social, economic and environmental dimensions of sustainable development.

Changing values about rural land use

The body of literature now reviewed has sought to understand rural restructuring and rural social relations in advanced capitalist economies through examining the economic, social, political and ideological dimensions of influence since World War II (Marsden et al. 1993). The frameworks of productivism and the post-productivist transition endeavour to provide an understanding of the changes, the causes of the changes, and why they have occurred in a geographically uneven way. The frameworks are associated with periods of time and social and economic circumstances.

The literature contributes to this thesis in two ways. First, it provides a framework for understanding the changing values about rural land use that have emerged in this study. It contributes to an understanding of graziers' perceptions of sustainable development by charting the comparatively recent non-production influences on rural populations. Second, it acknowledges that rural land is valued for more than its productive capacity by those who use its productive capacity. Although the amenity value of rural landscapes is well documented in the rural idyll literature, and its conservation value in the environment literature, it is the body of work to be discussed now where the three areas of production, consumption and protection (Holmes 2006) are linked. It is the Australian work (Ash & Stafford Smith 2003; Barr 2005; Holmes 2006) on the changing values about rural land use that is of most interest because of their applicability to this study. However, prior to this discussion the frameworks in this body of literature are discussed.

Productivism

A frequently used definition of productivism comes from Lowe et al. (1993, p. 221) who define it as 'a commitment to an intensive, industrially driven and expansionist agriculture with state support based primarily on output and increased productivity'. A network of support for agricultural production developed, which included 'suppliers, financial institutions, research and development centres' (Lowe et al. 1993, p. 221), creating a powerful agricultural policy community through the control of decision-making processes (Wilson 2001). State support occurred through 'farm subsidies, price guarantees, and protectionist and interventionist policies' (Wilson 2001, p. 79), which increased agricultural output and productivity (Higgins & Lockie 2001; Lowe et al. 1993) and provided farmers with a level of financial stability (Argent 2002). The goal was production and profit maximisation (Ward 1993). This occurred in post-World War II Britain to relieve food shortages (Ward 1993),

with a similar process and level of state intervention in Australia, to relieve food shortages and to correct the balance of payments problems resulting from high imports (Argent 2002). Productivism occupied a place in agricultural practice and policy that was unassailable (Cloke & Goodwin 1992).

Bowler (1985) conceptualised the structural dimensions of the industrialisation of agriculture as intensification, concentration and specialisation. Intensification refers to the increased use of non-farm inputs in agriculture to increase productivity. Concentration is where production is confined to fewer but larger farm businesses, and geographically concentrated in fewer regions and countries. Specialisation at the farm level is where individual producers focus production on a narrow range of products.

Three of the impacts of productivism have been negative environmental impacts, undermining of the small family farm and the creation of food surpluses (Argent 2002; Lowe et al. 1993; Wilson 2001). The most significant negative environmental consequences were the pollution of the rural environment and destruction of ecosystems from the use of agricultural chemicals and land improvement, the dependence on fossil fuels, over-production for the domestic market and increased agricultural debt (Bowler 1985). Ward (1993) found a direct relationship between the industrialisation of agriculture and environmental degradation in his UK study where the rate at which hedgerows and woodland were removed increased with the level of subsumption.[3] In Australia, the intensification of agriculture involved farming practices that were responsible for large-scale environmental degradation (Lawrence 2005). The capital intensive expansion of the farm sector saw increased mechanisation, which reduced the demand for labour and contributed to the population decline. This, in turn, created new social relations (Argent 2002; Marsden et al. 1993). The food surpluses resulting from the increased production outpaced the domestic markets' ability to absorb it (Marsden et al. 1993). World surpluses depressed prices and in Australia, for example, the national wheat marketing board introduced production quotas which cut farm incomes (Argent 2002). The financial situation for some farmers was worsened by institutions' reluctance to lend in these circumstances (Argent 2002). One government response in Australia was to create a farm adjustment scheme in 1971 which continues in various forms today (Argent 2002, p. 103).

[3] Subsumption is where producers find themselves being fully integrated into large scale agri-food industries through their use of items such as chemicals and fertiliser.

Post-productivism

The post-productivist transition represents a shift from agriculture having a central role (Cloke & Goodwin 1992) and the actors and institutions a secure position (Marsden et al. 1993) in land use and ownership. The emergence of other values and land uses contested the hegemony of agriculture. One of these was the conservation of land, and in Australia the environment movement emerged, in the 1980s (Hutton & Connors 1999, p. 167). When the negative impacts of productivism emerged, governments became less willing to continue subsidising the agricultural sector through high-cost policy supports in an environment of financial pressure, due in part to commodity market surpluses (Argent 2002). This occurred in a context of vocal interest groups challenging the hegemony of agriculture (Argent 2002; Halfacree & Boyle 1998).

In the agricultural domain, Ilbery and Bowler (1998) suggest post-productivism is a reversal of the trends identified by Bowler (1985). The reverse of intensification is extensification, which is the reduction of non-farm inputs in production; the reverse of concentration is dispersion, which is the creation of smaller farm business units through subdivision; and diversification the reverse of specialisation occurs through developing income sources, either through non-agricultural sources or different types of agricultural activities (Ilbery & Bowler 1998).

At the macro level, economic restructuring resulting from globalisation and the associated neoliberal policy approaches has created processes that have resulted in differentiated development within and between countries (Lowe et al. 1993). The increased demand for rural space for non-agricultural purposes as a micro process (Lowe et al. 1993) represented increased competition for (Lowe et al. 1993) and new exploitative interests in rural areas (Marsden et al. 1993) for ‘amenity, recreation, conservation and residential purposes’ (Lowe et al. 1993, p. 205). Slee (2005) claims that, although many consumption demands can be met through the market (for example tourism, residential preferences), some environmental and recreational services require policy solutions – a position with which Holmes (2002) concurs. These combined processes have helped to create differentiated rural spaces (Evans, Morris & Winter 2002) with differing trajectories of change (Holmes 2006; Murdoch et al. 2003). Slee (2005) claims that factors related to consumption are the primary drivers of much rural change in Britain and much of the developed world, which is consistent with Halfacree and Boyle’s (1998) claim that, although agriculture will continue as the primary land use in rural

areas, its social and economic dominance is no longer assured. Holmes' (2006) and Barr's (2005) analyses are consistent with this. Although rural landscapes have long had multiple functions (Holmes 2006; Slee 2005), Australian authors conclude that non-production uses influence the rural economy in Australia (Argent 2002; Barr 2005; Holmes 2006). Argent (2002) and Holmes (1995, 2002) recognise a shift in government policy that favours the interests previously excluded from decision-making about rural land, such as environment goals and the recognition of Aboriginal native title.

There is a high level of consensus that agriculture is in a post-productivist period in most developed countries (Holmes 2002; Ilbery & Bowler 1998; Shucksmith 1993; Ward 1993; Wilson 2004). There is also evidence that different elements of rural society are experiencing the changes described as the post-productivist transition at different rates (Holmes 2002, 2006; Marsden 2003; Wilson 2001), indicating that the transition is not linear in a temporal sense. This allows for the coexistence of both productivist and post-productivist regimes, both temporally and spatially (Burton & Wilson 2006; Wilson 2001; Wilson & Rigg 2003), which a number of authors have concluded occurs (Evans, Morris & Winter 2002; Ilbery & Bowler 1998; Ward 1993; Wilson 2004). Although Holmes (2002, 2006) and Barr (2005) use different descriptors, both have mapped the spatial differences in changed land use. The agricultural domain is the focus for productivism (Bowler 1985; Ilbery & Bowler 1998), but the increased demand for rural space for non-agricultural purposes (Lowe et al. 1993), such as consumption (Cloke & Goodwin 1992; Slee 2005), and for its aesthetic appeal (Marsden 2003), which represent the 'other' values and land uses, constitute a significant aspect of the post-productivist transition.

The productivist and post-productivist transition frameworks have been criticised because of the implied linearity and binary assumptions that underpin them (Argent 2002; Cloke & Goodwin 1992; Evans, Morris & Winter 2002; Wilson 2001; Wilson & Rigg 2003). The consensus that productivism and post-productivism occur concurrently suggests multidimensionality rather than linearity. A second criticism is that the post-productivist transition framework lacks clarity. It fails to provide a comprehensive or nuanced understanding of the complex, diverse processes of multidimensional change (Argent 2002; Cloke & Goodwin 1992; Evans, Morris & Winter 2002; Mather, Hill & Nijnik 2006; Wilson 2004).

How productivism and the post-productivist transition are measured has also attracted criticism. Although the thrust of research is about measuring whether the transition from productivism to post-productivism has occurred, and what form it takes with the focus on explaining the occurrence of differing trajectories of change (Lowe et al. 1993; Murdoch et al. 2003), there is little agreement on how to conceptualise and therefore how to measure it (Walford 2003). Policy has been used extensively as an indicator because it is readily accessible and reflects changes in attitudinal and societal thinking, but has been criticised because indicators do not measure grass-roots change (Wilson 2004).

Changes in Australia

Work investigating the post-productivist transition and multifunctionality in Australian agriculture though comparatively recent, has occurred using policy analysis (Argent 2002; Bjorkhaug & Richards 2008; Cocklin, Dibden & Mautner 2006; Wilson 2004), an examination of the changing landscapes the underlying drivers of this (Barr 2000, 2005; Holmes 2002, 2006) and the investigation of changes for small rural communities (Curry, Koczberski & Selwood 2001; Tonts & Greive 2002). The associated counter-urbanisation literature in Australia predates this (see Smailes 1997). However, there is a longer documented history of the changing values of land in the Australian rangelands, which is where this study was conducted. Holmes (1994, 2002, 2006) is one of a number of authors who have identified multiple land users, multiple land uses or values in the Australian rangelands, and the associated dynamics of complimentarity and conflict between groups. The uses of the rangelands have been identified as pastoralism, mining, conservation, tourism, defence and cultural (Ash & Stafford Smith 2003; Donohue et al. 2005; Fargher et al. 2003; MacLeod & McIvor 2003; Taylor & Braithwaite 1996; Woinarski & Fisher 2003; Young & Ross 1994). Although the primary use of this area has been pastoralism, pastoralists were identified as just one of seven groups considered to have an important voice in how Australia's rangelands are managed (ANZECC 1996).

Of particular relevance to this thesis is the work of Holmes (2002, 2006), who tracked changes in the Australian rangelands over time, and Barr (2000, 2005), who investigated structural adjustment decisions by Australian farmers from the mid-1980s to the mid-1990s then the changing social landscape in Victoria. This work is of interest because it describes changes at the landscape level, which allows it to inform the current study and provide some basis for comparison. Both Barr and Holmes have accumulated a body of work about

Australian farmers over a period of years, which provides them with important insights into the changes they have described. Holmes' work is most relevant because it is based on the Australian rangelands, which is where the current study was completed. This contrasts with Barr's (2005) study in Victoria which has a significantly different landscape, history and land use record.

As early as 1994, Holmes (1994) identified a move from predominantly commodity values to a mix of commodity and amenity values. The amenity values included Aboriginal land rights, the preservation of biodiversity, sustainable management, tourism and recreation. Holmes (1994, p. 150) states that 'pastoralists are a cohesive interest group with a well articulated, distinctive value orientation, in which intrinsic, expressive and social values are strongly developed, ensuring a high survival capability when faced with adversity' and are 'extremely concerned about threats posed by conservationists, Aboriginal land rights, land tenures and other matters tied to government intervention'.

In his 2002 paper, Holmes identified three driving forces he perceived to underlie the changes he reported in the Australian rangelands: agricultural over-capacity, alternative amenity-oriented uses (of land) and changing social values (see Table 1). From this he mapped, at the regional scale commodity and amenity potential, which was consistent with Wilson's (2001) observation of spatial and temporal differences. Barr (2005) identified similar trends to Holmes (2002): improving productivity in agriculture and food supply chains; amenity migration;[4] a changing demographic structure; and changing community values (see Table 1). In his analysis of structural change, Barr (2000) predicted three types of future landscapes in Australia: traditional agricultural, amenity and small farms. In his Victorian analysis, he identified four spatially differentiated landscapes (production, rural amenity, transitional and irrigation), which is consistent with this approach (Barr 2005), and with Wilson's (2001) observations.

In 2006, Holmes progressed his earlier analysis by mapping the 'modes of occupance', based on three driving forces and he predicted trajectories of change in the Australian rangelands (Holmes 2006). This typology is based on the three primary human uses of land: production, consumption and protection (Holmes 2006). Holmes argues that the social, economic and

[4] Amenity migration refers to the shift of urban residents to nearby rural locations to enjoy the aesthetic appeal of the landscape, often through the purchase of a small holding.

environmental changes that shape the Australian rangelands are a reordering of these uses with the once-dominant production goals now being contested by consumption and protection goals. Barr's (2005) analysis of changes in the Victorian landscape fits this pattern. This conclusion is consistent with the view that Queensland has been known for its development focus (Cameron 2005; Kellow & Niemeyer 1999), but that there is now an increased demand for non-pastoral use of pastoral leases in the Australian rangelands, such as non-conventional livestock and tourism (Productivity Commission 2002; Stafford Smith & Abel 2001), as previously reported, and a change of public opinion towards an increased environmental awareness (Ash & Stafford Smith 2003). There are other conceptualisations of rural space not unlike those of Holmes and Barr. However, these were developed from work in the UK and their low relevance to this study precludes any discussion of them (see Halfacree 1999; Marsden 2003; Walford, Everitt & Napton 1999).

Table 1: Drivers and trends in Australian landscapes

Holmes (2002, 2006) *Driving forces*	Holmes (2006) *Goals*	Barr (2005) *Trends*
1. Agricultural overcapacity	1. Production	1. Improving productivity in agriculture and food supply chains
2. Alternative amenity-oriented uses of land	2. Consumption	2. Amenity migration
3. Changing social values (environment; social justice)	3. Protection	3. Changing community values
		4. A changing demographic structure

An important point that Holmes (2006) makes is that these three uses of land (production, consumption and protection) were indivisible in traditional Aboriginal culture, and that consumption and protection values were embedded in production modes of subsistence agriculture. Holmes (2006) claims that it was only with industrialisation that production goals were given priority, and now there is a reverting back to a 'more complex, contested, variable mix of production, consumption and protection goals' (Holmes 2006, pp. 142-143). Barr notes that one of the attractions for farmers is the lifestyle, which includes the 'amenity of open space and attractive landscapes' (Barr 2005, p. 21).

A second and related point that Holmes (2006, p. 145) makes is that 'multifunctionality is increasingly recognised as a characteristic of all rural holdings, even those outwardly in pursuit of monofunctional production or consumption goals'.[5] As Holmes (2006) states, many rural holdings are required to have protection goals via environmental regulation. Aboriginal land rights also represent a protection goal. The idea that agricultural landscapes deliver non-agricultural benefits is not new (Potter & Burney 2002). In a similar, vein Dobbs and Pretty (2004, p. 222) claim that agriculture is 'inherently multifunctional', with the 'side-effects of agriculture' including aesthetic appreciation, recreation, amenities and wildlife to name a few, and that the provision of these goods and services was not new. However, a reading of the literature demonstrates that this idea is neglected. Consistent with the idea of agricultural landscapes having a value beyond production is the rural idyll, which had its beginnings in antiquity (Bunce 1994; Montmarquet 1989). The main components of the rural idyll are the aesthetic value of the land and the wholesomeness of a life lived close to the land. These are amenity or consumption values.

In UK-based literature, the consumption and protection goals are combined, such as the aesthetic and environmental value of the maintenance of hedgerows. Holmes (2006, p. 144) separates the two: consumption goals are defined as 'market-driven amenity-oriented uses', with the demand for residential, recreation and tourism in rural areas occurring as a result of higher incomes and lifestyle changes that create an amenity premium on land values and provide opportunities for pluriactivity for primary producers. Protection goals are described as environmental concerns about sustainable resource management and the preservation of biodiversity and social justice concerns about Aboriginal land rights.

Much of the work in Australia that has investigated multifunctionality is conceptual in nature. Consistent with one of the lines of exploration in the multifunctionality literature, several papers explore whether or not multifunctionality has occurred in Australia and to what degree. These rely largely on policy analysis, which has been identified as a favoured approach to measurement because of its accessibility (Wilson 2001). Although they have reached different conclusions about multifunctionality, each of these authors has concluded that there is a strong interest in environmental protection. Some also argue that the government could be considered to have an equally strong interest in continuing intensive productive practices, a

[5] Multifunctionality is a term used in the post-productivist transition literature in various ways, but describes the multiple uses or values of land. It highlights the non-production uses of rural land.

hallmark of productivism (Bjorkhaug & Richards 2008; Cocklin, Dibden & Mautner 2006; Holmes 2006). Of importance here is that those who investigated it reported an increased importance being given to environmental goals (Argent 2002; Bjorkhaug & Richards 2008). Some commentators also report increased importance being given to Aboriginal land rights (Argent 2002; Holmes 2002, 2006).

In summary, the social component of farming is a valued aspect of farming, and has endured throughout the history of farming. Although the predominant use of rural land in Australia has been for production purposes, there is a history in Australia, and elsewhere, of consumption and protection uses, occurring concurrently with production uses. More recently consumption and protection values in broader society are contesting production, as the dominant use of rural land. In Australia these typically represent market-driven amenity values, environmental protection and Aboriginal land rights. This section of the review is relevant to an understanding of graziers' perceptions of sustainable development because it highlights the importance of the social component of farming and comparatively new pressures on farmers, in addition to the existing pressures of production, reviewed in the previous section.

The implications for sustainable development

The first three sections of this chapter – dealing with sustainable development, structural change in Australian agriculture and changing values about rural land use – have provided the background for this final section. The purpose of this section is to highlight areas that are particularly relevant to a discussion of sustainable development. Despite the Australian emphasis on ecologically sustainable development, there is a lack of evidence of the effectiveness of actions taken to date. The declining terms of trade continues for farmers, so the difficult financial circumstances will continue for those farmers who are unable to make the necessary productivity gains. Earlier concerns were held about the welfare of these farmers and their families (Botterill 2000a), but as the emphasis on farmers becoming self-reliant has increased, the concerns are about the risk of environmental damage if economic interests are given preference (MacLeod & McIvor 2003; Stafford Smith, Morton & Ash 2000).

Economic viability for the farmer

The well-documented declining economic situation for farmers is now briefly outlined. The decline of rural and remote communities in Australia from the impact of declining terms of

trade, globalisation and the negative impacts of neoliberalism is well chronicled (Bourke 2001a; Gerritsen 2000; Lawrence 1987; Lloyd & Malcolm 1997; McMichael & Lawrence 2001; Tonts 2000). The impacts of structural change on rural communities include a continuing decline in the rural population, and a decline in services and participation in rural communities (Alston 1999; Argent & Rolley 2000; Bourke 2001; Cheers & Luloff 2001; CIE 1997; Gerritsen 2000; Haslam McKenzie 2000; Pritchard 2000; Tonts 2000, 2005; Vanclay 1994).

The structural changes have impacted unevenly, with a significant effect on the agricultural sector – particularly the sheep, wool, dairying and sugar cane industries (Gray & Lawrence 2001; Pritchard & McManus 2000) – contributing to the continuing declining terms of trade (Gray & Lawrence 2001; Lawrence 1987). The assumption that underlies economic rationalism is that exposing farmers (and others) directly to markets will promote increased efficiency and productivity for those with the capacity to achieve them (Tonts 2005).

There have been increases in productivity for livestock, but they are greater for cropping (Hooper et al. 2002); greatest productivity gains are made by large farms (Cary et al. 2001; Hooper et al. 2002). There has been insufficient productivity growth in livestock production to stay ahead of the declining terms of trade in that industry (Ash & Stafford Smith 2003; MacLeod & McIvor 2003).

An impact of these economic pressures is that there are fewer, larger farms, increased debt, and greater reliance on off-farm income. The number of commercial farms halved during the 40 years prior to 2002, and the average area increased by almost half (Hooper et al. 2002, p. 495), with the least change in the broadacre and grazing industries (Lindsay & Gleeson 1997). Many of the farm exits have been from mid-sized rather than smaller farms (Barr 2000). Off-farm income has become important to those on small farms (Cary et al. 2001), with proximity to regional centres or metropolitan areas providing better access to this source of income (Barr 2000). Rural debt increased one and a half times more than the gross value of production between 1994 and 2005 (Moore Stephens 2005, p. 19).

Business management skills were identified as central to effective operation in the challenging economic circumstances many farmers found themselves in, and government funding supported training initiatives in this area (McColl, Donald & Shearer 1997). Limited

management skills were identified as an issue in the northern pastoral industry up until the 1990s (Ash & Stafford Smith 2003). The same authors argue that since then there have been 'significant improvements in management capacity and skills and a more holistic approach to management now pervading the [grazing] industry' (Ash & Stafford Smith 2003, p. 114). This more corporate focus reflects an international and national change (Tonts & Black 2002).

This finding may reflect the fact that, over a recent four-year period more than 33,500 Queenslanders (Queensland Rural Adjustment Authority 2004) from 30,698 farm establishments (ABS 2000) participated in FarmBis training aimed at improving the business and natural resource management skills of primary producers and landholders. General business courses were by far the most popular. However, Taylor (2003), in a study of Australian rangelands residents, found that although most felt that stock management skills were adequate, there were deficiencies in systems, social and business skills, and in biophysical understanding.

Being internationally competitive

Agricultural production occurs in a competitive international marketplace. Concerns have been raised about the impact of this on environmental management (Gray & Lawrence 2001; Higgins 1998; Higgins & Lockie 2002; Martin & Halpin 1998; Smart 2003; Swift 2002). The broad issue is a questioning of the ability of market-oriented institutions to prioritise non-core functions such as environmental management (Dovers 2001). The deregulation of agriculture and associated structural adjustment contributed to the cost-price squeeze which required farmers to become more efficient to remain competitive in an international market. This often involved intensifying production through the use of fertilisers and pesticides, which are known to contribute to environmental degradation (Vanclay & Lawrence 1995). The economic rationalist approach fails to account for the non-market costs of production, such as environmental externalities (Productivity Commission 1999b). The potential result is that there will be economic pressure to 'extract the greatest return from land in a competitive marketplace that does not reward environmental management' (Cocklin, Dibden & Mautner 2006, p. 201). This is because graziers will need to focus on short-term production to meet financial commitments.

Barriers to changed land management practices

There is little evidence that land degradation is being addressed, as reported in Chapter 1, despite the government's goal of protecting the environment. The adoption of sustainable land management practices has been slow, the practices that produce degradation continue, and evidence of continued degradation exists (Barr & Cary 2000; Cary, Webb & Barr 2001; Dibden & Cocklin 2003; Gray & Lawrence 2001; Nelson et al. 2004; Riley et al. 2002; Stafford Smith, Morton & Ash 2000; Tonts & Black 2003).

Approaches to improving land management practices include voluntary schemes using a social change approach, and regulation, with the latter taking a predominantly state-based approach. The voluntary approach has focused on farmers improving their land management practices through extension, then Landcare and similar groups with an environmental focus, as discussed.

Issues identified with the non-adoption of improved land management practices by farmers are program logic, practical and structural. The program logic issue is that the assumption that raised awareness would lead to improved land management practices is flawed. The concept of stewardship, which is a 'belief that one has a responsibility or obligation to maintain the land for future generations' (Barr & Cary 2000, p. 29), underlaid Landcare. It was assumed that a stewardship ethic would result in changed land management practices. However, there is a weak link between environmental attitudes and behaviour (Barr & Cary 2000; Curtis 1997; Vanclay 1986, 1992). A stewardship ethic is not a sufficient condition to change farming practices (Barr & Cary 2000).

The practical reasons for non-adoption were outlined as early as 1966, when Tully (1966) argued that the dissemination of knowledge was not sufficient for the adoption of new practices to occur. The practice also needs to be relevant to the individual, within the individual's means to achieve and consistent with their goals. In a review, Cary et al. (2001) reported that the rate of adoption is influenced by the relative advantage of adopting it, the complexity of the practice, its compatibility with the existing on-farm systems, whether it can be trialled prior to adoption, whether the proposed changes are observable, whether it will work in that locality, and the nature of the risks associated with adoption. The profitability of the practice is an important aspect and dependent on the financial circumstances of the

individual farmer which is influenced by market and season conditions. Cary et al. (2001, p. 11) also report that ‘many broadacre farm businesses do not produce sufficient surpluses to allow for reasonable living standards, investments in the farm business and investment in resource protection and the environment’.

The structural constraints have been identified as the greatest barrier, particularly for broadacre industries (Barr & Cary 2000). It has been argued that failure to address constraints at this level has contributed to the slow adoption of changed land management practices (Barr & Cary 2000; Campbell 1997). The structural barriers to the adoption of more sustainable land management practices that were identified, were institutional arrangements and the market-driven nature of production.

Institutional arrangements are ‘laws, organizations and bureaucracies, policy processes, markets, financial systems, social arrangements, educational systems and more’ (Mobbs & Dovers 1999, p. 95). This includes criticisms about the government response to globalisation which has taken an individual rather than holistic approach to environment management. This is because a focus on individual farmers changing their land management practices fails to acknowledge that there are broader structural forces impacting on their ability to do so (Gray & Lawrence 2001; Martin 1997; Vanclay 1997). With Landcare, this focus involved the devolution of power to the local level (Martin & Woodhill 1995).

A lack of policy integration is another institutional barrier to improved land management practices. This results in part from the issues-based approach to environmental problems taken by government (Dovers 1991; Dovers & Wild River 2001; Kingma, Crellin & Hoitink 1999; Landsberg 2000; Morrison, McDonald & Lane 2004). A policy framework that integrates other sectors is argued for (Batini & Claymore 2000; Kingma, Crellin & Hoitink 1999), along with an integrated policy package that includes a long-term direction (Campbell 1997; McEvoy & Ravetz 2001) and legislation without conflicting aims or unintended consequences (Industry Commission 1997) that promotes the long-term management of natural resources (CIE 1997). The existing arrangements are claimed to contribute to non-sustainable agriculture (Bates 2001; Cocklin, Dibden & Mautner 2006; Gray & Lawrence 2001; Lockie 2001).

Conclusion

The driver for sustainable development was the recognition that resource-intensive economic development had negative environmental and social impacts that operated on a global scale. The goal of sustainable development thus is economic development without environmental degradation or intergenerational or intragenerational inequity. However, joining the three dimensions of sustainable development – economic, environmental and social – creates inherent contradictions that are observable in the central debates.

Development must continue, but whether constructed capital can replace natural capital is an issue that continues to be contested. This debate is relevant to this thesis for two reasons. First, the nature of the industry under study, grazing, where most livestock graze on native grassland, dictates that there are limited options for constructed capital to be created. This increases the importance of retaining natural capital. Examples of constructed capital in such a setting would be the introduction of non-native pastures. Second, if natural capital is lost through environmental degradation, the low productive value of the study areas (see Chapter 3), suggests that there is likely to be a limited investment in restoration (Stafford Smith, Morton & Ash 2000).

An aspect of relevance to this thesis is intergenerational and intragenerational equity. When environmental degradation occurs on grazing land, the productivity of the land is reduced for future generations. This is an example of intergenerational inequity. The economic importance of the agricultural sector to the national economy for much of the twentieth century, combined with a lack of knowledge of appropriate farming practices for the Australian environment, resulted in extensive land degradation. Despite the introduction of the NSESD, which preferences ecologically sustainable development, environmental degradation continues.

The major government initiative that attempted to change the land management practices of farmers, Landcare, has been criticised on several levels. The focus on the individual, a characteristic of the economic rationalist approach, has been criticised for neglecting to address structural barriers, a significant one being the lack of policy integration. The program logic of Landcare was considered flawed, and the greater majority of farmers have not been involved.

Another facet of this issue emerges from the review of the changing values of rural land use. Since European settlement, the primary use of rural land in Australia has been for agricultural production. However, the dominance of production values is being challenged by consumption and protection values (Holmes 2006). This raises the issue of intragenerational equity in terms of competing needs, and how they can be equitably met. This issue involves a central element in sustainable development, the compatibility of economic growth and environmental quality. Production values favour economic growth, whereas protection supports the achievement of environmental quality.

The major influences on Australian agriculture since the late twentieth century have had economic impacts, and this is what has captured the attention of many commentators. Consequently the changing economic fortunes of farmers have been extensively documented from a structural perspective. For much of the twentieth century agriculture was of fundamental importance to the Australian economy, and this was an important rationale for the high level of support that was provided to farmers. Commencing in the 1950s though, there have been significant and continuing influences that have challenged the ability of many farmers to maintain economic viability. Of interest to this thesis, the financial circumstances of the individual farmer are known to be a key factor in the adoption of sustainable resource management practices (Cary et al. 2001).

An exploration of the social component of farming reveals that there are enduring positive beliefs about it, of a social nature (Johnstone 1940; Montmarquet 1989), and notions of agrarianism have had a continued presence in Australian agricultural policy (Botterill 2004). However, despite an ongoing recognition that the non-economic values of farming are important to farmers, the social component of farming has not attracted the same level of interest as the economic and environmental dimensions.

Chapter 3: Methodology

Introduction

This chapter describes the research methodology used for this study. The way in which the methods of in-depth unstructured interviews, participant observation in a case study contributed to the interpretive approach is explored and an explanation provided for their use. The processes used for ethical clearance and the study locations and sample selection are also explained. The procedures for data collection and analysis are described, as are the limitations to the study and measures taken to augment the trustworthiness of the conclusions drawn.

Interpretive methodology

As explained in Chapter 1, the research was undertaken because little is known about graziers' perceptions of sustainable development in Australia, despite the literature on sustainable development being a large body of work. This suggested the need for exploratory research, which is ideal for answering 'what' questions even though it creates new hypotheses rather than providing definitive answers (Black 1993; 1994, p. 18). Interpretive approaches allow the flexibility that exploratory research requires together with the creativeness needed for discovery (Neuman 1994). They are often the forerunner of more systematic and extensive study (Neuman 1994).

Interpretive methodology is a type of qualitative research based on constructivist ontology. Constructivism is an approach where reality is perceived to be socially constructed (Berger & Luckmann 1966; Gergen 1982, 1985). Denzin and Lincoln (2000, p. 167) state that '"reality" or validity are … derived from community consensus regarding what is "real", what is useful, and what has meaning', and Schwandt (2000, p. 197) says 'that human beings do not find or discover knowledge so much as we construct or make it'. There are therefore multiple realities in everyday life, and shared meanings between individuals (Berger & Luckmann 1966; Gergen 1982, 1985). Interpretations are made in the context of 'shared understandings, practices [and] language' (Schwandt 2000, p. 197). Within a constructivist paradigm, realities are constructed, so are alterable, shared, and socially and experientially based (Guba & Lincoln 1994). The objective of analyses using an interpretive approach is to understand 'how members of society understand their own actions' (Travers 2001, p. 10) through the 'meanings … constructed by [these] social actors' (Schwandt 1994, p. 118).

An interpretative approach suits a study that aims to develop an understanding from the participant's perspective. It is typically conducted through intense contact with people in the field and is reflective of the everyday life of individuals. The researcher's role is to gain a holistic overview of the context under study through generating data on the perceptions of people from the inside, through a process of deep attentiveness and empathetic understanding. The generality of the research topic – graziers' perceptions of sustainable development – acknowledges the multiple constructed realities, socially and experientially based, that are alterable (Guba & Lincoln 1994).

To provide some parameters to the breadth of the exploratory approach and the depth of the interpretative approach, I selected a particular approach to use as a guide: Grounded Theory. This is an approach where data are collected and analysed concurrently, developing a conceptual analysis inductively that increases in depth and breadth as the study progresses (Strauss & Corbin 1994). The primary differences between Grounded Theory methodology and other qualitative approaches are the emphasis on theory development and the inductive approach. Although the development of theory was beyond the scope of this exploratory study, a theme analysis was produced, which differs from theory development only in the level of analysis pursued (Strauss & Corbin 1990).

Grounded Theory methodology was used to guide sampling, data generation and analysis. It was appropriate for the research topic for two reasons. The first is because this acknowledges the multiple constructed realities, socially and experientially based, that are alterable (Guba & Lincoln 1994), as well as accommodating the multiple realities of everyday life and being responsive to context (Lincoln & Guba 1985). Second, the inductive process of data analysis suited an exploratory study where little information was known initially but, as the study progressed, information could be incorporated into the analysis as it was acquired.

A major criticism of Grounded Theory is that it is based on positivist assumptions, such as that there is an external reality, to be discovered (Charmaz 2000). This methodology is considered to be a variety of symbolic-interactionism, which grew out of the interpretative tradition known as the Chicago School (Travers 2001). The approach developed by Glaser and Strauss (1968) has been criticised for moving too far from its intellectual roots because of the focus on developing theory rather than on 'rich descriptions of local settings' (Travers

2001, p. 59). For Glaser and Strauss the focus is on the discovery of theory (Alvesson & Skoldberg 2000), while the emphasis for Strauss and Corbin (1990) is on verification.

Charmaz (2000) and others (see Annells 1996) claim that the tools of Grounded Theory can be effectively used by those using a constructivist or a positivist paradigm. The tools used from Grounded Theory in this study are theoretical sampling, memos, coding and the constant comparative method which reflects the original approach taken by Glaser and Strauss (1968) and continued by Glaser (1992). Although it is criticised for resting on positivist foundations, it is consistent with an interpretive approach because the inductive approach is maintained. This allows the theory to emerge from the data, rather than be forced (Glaser 1992). The focus of this study is description rather than theory development.

The significance of the development of Grounded Theory for qualitative research was that it challenged the then dominance of quantitative methodology, based on a positivist paradigm. This was part of a broader challenge to the positivist paradigm. One way it achieved this was by documenting and systematising a process for doing qualitative research (Charmaz 2000). It is in the development of techniques such as axial coding (to link categories) and a conditional matrix (to provide an overview of the analysis and to link component parts)(Strauss & Corbin 1990) which are tools to assist the analyst, that has attracted criticism. Glaser, who with Strauss, developed Grounded Theory has criticised the use of these tools strongly. He claims that these tools force the analysis instead of allowing the theory to emerge from the data inductively through the use of the constant comparison method (Charmaz 2000; Dey 1999). The emphasis on validity and reliability and the insistence that Grounded Theory is verifiable is also criticised. It is claimed to reflect the positivist training and tendencies of Barney Glaser, who developed Grounded Theory and later Juliet Corbin rather than the interpretive alternative that it was proposed as (Charmaz 2000; Dey 1999). Glaser claims that the focus on verification creates a full conceptual description of the data which overshadows the goal of generating theory (Charmaz 2000). Another criticism focused on the interpretive aspect is that by coding the data, it is fractured, events are removed from their context, making it difficult to portray the subjects' experience fully (Alvesson & Skoldberg 2000; Charmaz 2000). A criticism about the output of a Grounded Theory study is that it can create trivial knowledge such as that 'prisoners lack privacy', which is readily assumed, especially for the amount of work invested (Alvesson & Skoldberg 2000, p. 30).

The interpretive approach used in this study both contrasts with and complements the positivist tradition found in much social science in natural resource management research in Australia. Surveys, structured interviews and group processes using a positivist paradigm have been used extensively (Maybery, Crase & Gullifer 2005; Reeve 2001a; Roberts et al. 1998; Stothers 2000; Young & Hajkowicz 2000). However, a shortcoming of these approaches is that they lack context, are not particularly suitable when little is known about a topic, and provide limited opportunities for rich description. These, by contrast, are the strengths of an interpretive exploratory approach. In addition to this, rural and remote residents are known to prefer one-to-one communication over group processes (Shrapnel & Davie 2001). Valuable contributions have been made to understanding the needs and issues of rural Australia using a positivist paradigm and the role of this study was to complement and build on the existing body of knowledge.

An interpretative approach using Grounded Theory as a guide was appropriate for an exploratory research study seeking to understand graziers' perceptions of sustainable development. It has the potential to capture the diverse and complex realities that exist in everyday life. It is an approach which would enhance the ability of the researcher to understand the context of shared understandings.

Study sequence

Table 2 shows the chronological progression of the study from the first field contact until the final reporting back to participants. The main study took five months of fieldwork. Most work was conducted in the field but significant relationship-building activities were conducted prior to and following fieldwork.

Both tasks and processes were involved in the relationship-building dimension of this study which commenced in mid-2001 with exploratory research. This was an ongoing dynamic process consisting of introductions, forming relationships with individuals and maintaining those relationships, more introductions, more relationship building and more maintenance of these relationships over a period of time in order to conduct the research and provide feedback.

Table 2: Fieldwork stages and activities

Stage of study	*Time periods*	*Activities*	*Reporting back to study participants*
Exploratory study: Central West	July to October 2001	Telephone, email, field visit (two weeks)	Brief written report, December 2001
Exploratory study: Gulf	January 2002	Field visit (one week)	Feedback report provided by study tour organisers
Pilot study: south-west Queensland	May 2002	Field visit (four days)	Letters of thanks, June 2002
Gulf location	June to August 2002	Field visit (ten weeks)	Letters of thanks, December 2002
Central West location	August to October 2002	Field visit (ten weeks)	
Follow up	December 2002 to February 2006	Telephone calls, emails	Brief reports of findings, December 2002 and January 2004
Feedback of results	March 2006	Telephone calls, emails, field visit (two weeks), two radio interviews and three newspaper pieces in the study area	In-person and as per 'activities'
Closure of study	July 2008	Letters	Final written report

Methods

This section describes the methods used and the rationale for their selection, how selection occurred, the design of the method and the procedure for conducting it. The conduct of in-depth unstructured interviews was the primary method used, supplemented by participant observation and a questionnaire, all of which were conducted as a case study in two locations.

Interviews

Rationale for interviews

The qualitative research method of in-depth unstructured interviews, which was the primary source of data for the study, was selected because it allows for the discovery of meaning and an understanding of the participants' social world from their own viewpoint (Denzin & Lincoln 2000). The participant perspective was of particular interest in this study because, despite the plethora of research on sustainable development, graziers' perceptions of sustainable development have not been well examined. Additionally, the unstructured interview is a way of exploring many aspects of the participant's agenda, treating subjects as they come up and pursuing interesting ideas. It brings out the affective and value-laden aspects of participant responses, and elicits the personal and social context of beliefs and feelings through spontaneous responses that are specific and concrete, self-revealing and personal (Kvale 1996). It was therefore ideal for exploratory research, and often used in this context (Seale 2004). Characteristics of in-depth unstructured interviews are that they appear more like conversations than formal questions and answers, have a topic or theme approach rather than a structured list of questions, and it is assumed that the data are generated by the interaction between the researcher and interviewee (Mason 1996). This approach to interviewing has been described as purposeful conversation (Fontana & Frey 1994).

Ethics

Ethical approval for the study was obtained from the University of Queensland's Behavioural and Social Sciences Ethics Review Committee. Copies of the Information Sheet and Consent Form provided to participants are in Appendix A. The standard required for consent is currently a written consent. Due to my professional background,[6] I was granted permission to use my judgment and proceed on a verbal consent if I thought the participant might misunderstand the request for a signature to have more significance or power than simply concrete evidence of agreement to participate, and refuse to participate as a consequence. Social work practice involves making decisions on a daily basis about the appropriate course of action amidst complex human emotions and beliefs in sensitive areas. I anticipated that older graziers may incorrectly believe that signing the Consent form could have legal implications due to their past experiences of legal documents requiring signatures.

[6] As a former social worker

Due to the sometimes lengthy discussions held about the study prior to the formal process of written consent, some participants felt that they did not need written information; however, as with other participants, I provided them with a copy of the Information Sheet. On the basis of a verbal discussion some participants indicated that they would sign the Consent Form without reading it, but I recommended that they read the Consent Form prior to signing it. On two occasions, participants gave verbal consent to be interviewed but said they would decide after the interview whether they would sign the consent form; on both occasions, they did sign.

Despite the broad and general nature of the topic, at times quite personal information and strong opinions were expressed. When people spoke about what I considered to be personal information not relevant to their perceptions of sustainable development, I deleted it from the audio-taped recording. At times, people became very passionate and emotive about the topic. On these occasions, the discussion was diverted to prevent comments that could later be regretted. This prevented the participant subsequently feeling uncomfortable about having particular opinions recorded, resulting in negative feelings about the experience post-interview. In addition to this a number of graziers in the exploratory studies and the main study reported that in the past their words had been misconstrued by researchers such as myself. This resulted in a level of suspicion about my motives as reported elsewhere. My willingness to extend this level of respect to participants, by deleting the text from angry or emotional outbursts was well received by the few who it was provided to. An aspect of ethical research is leaving participants with a positive experience for their own sense of well-being and to ensure there is a pool of willing participants for future research.

All data generated were de-identified on collection by the use of codes. I am the only person who has the information which matches the participants with their codes. The physical version of information was kept in locked premises not accessible to any other parties. The computerised version was kept on my computer in locked premises and when networked to the university system was protected at the same level as university computers. During fieldwork, all text files were password protected. The results are reported using pseudonyms to protect the privacy of study participants.

Pilot study

A pilot study was conducted with four families in a grazing and cropping community in South-east Queensland in order to trial the methods and procedures prior to the main study (see Table 2). This enabled the refinement of culturally appropriate language and concepts for this group and this topic. Methods devised to enhance participants' comfort with being interviewed were found to be unnecessary, as participants found the topic very interesting and were very relaxed about their involvement. This allowed for a more flexible and streamlined approach to the data collection.

Selection of participants

Snowball and theoretical sampling were used to recruit participants, which was consistent with the methodological approach. However, a specific goal was to maximise diversity in the sample to discover the range of perceptions because research has found that farmers are not a homogenous group (Maybery, Crase & Gullifer 2005).

In snowball sampling, each person interviewed is asked to recommend one or more others for interviewing (Babbie 1992; Miles & Huberman 1994). On most occasions, I asked the participant to make this request directly to the person they recommended on my behalf. On some occasions, I contacted the person without this recommendation being made directly, because of my time constraints. An inherent bias in snowball sampling occurs because people tend to refer within their network of family or friends (Neuman 1994). I used two strategies that helped to reduce this bias and also maximised diversity in the sample. The first strategy was to develop a set of key informants to provide multiple starting points for sampling. Key informants were identified through personal networks,[7] during exploratory field trips and subsequent interaction. The second strategy, used only in the early stages of the study, was to ask some participants to refer me on to a person 'just like you' and others to refer me on to someone 'really different from you'. This typically initiated discussions about what measures of similarity or difference were of interest, to which my reply was 'their perception of sustainable development'. In addition, early in the study where study participants offered me a choice of prospective participants, I selected to maximise diversity primarily in terms of age, gender and geographical location (within each location).

[7] Personal networks stemmed from the author's rural background and more recently from introductions to people that occurred in relation to the research project, but separate from the conduct of the fieldwork.

I sought diversity in the ages of participants to better reflect the varying needs and goals according to age and stage of life because these impact on farmer decisions and behaviours (Barr 2000). Women influence decision-making in rural business enterprises (Rickson & Daniels 1999), and the increasing recognition of their contributions to farming (Liepins 1998) indicated the importance of interviewing both men and women.

There were two reasons for seeking diversity in each geographical location. The primary reason was that there is a range in the productive capacity of the land (Stafford Smith, Morton & Ash 2000; Tothill & Gillies 1992), and it was assumed the financial circumstances of the grazing families may vary accordingly. This variance has the potential to create a range of perceptions of sustainable development. A secondary reason was to avoid inadvertently interviewing only within networks, as these were more likely to exist amongst neighbouring properties than amongst those more widely dispersed.

As the analysis progressed, theoretically relevant concepts were identified and theoretical sampling was used in addition to the other approaches (Miles & Huberman 1994; Strauss & Corbin 1990). With theoretical sampling, the goal is to select participants based on their ability to advance the analytical framework (Mason 1996). This is the conceptual structure of the results developed through the analysis and the testing of this analysis (Mason 1996).

An example of where I used theoretical sampling was when the concept of ‘over-grazing’ emerged early in the study as a complex issue and one of fundamental importance to sustainable development. The analysis suggested that over-grazing was a complex, difficult to resolve and recurrent issue. Following this development, a pastoral company offered me a choice of two prospective participants: one was a young man and son of the company owner who had been managing a property for just a few years; the other was an older man who had been managing the one property continuously for more than fifteen years and had recently given notice in order to pursue a lifetime dream. I selected the latter person because I assumed that this man would have had either personal experience of over-grazing or be well informed of friends’ and neighbours’ grazing practices due to his lengthy residence in the area. I considered that his mid-life decision to follow his dream, involving a substantial change, would have involved reflection which may have included such things as land management practices. In theoretical sampling, it was not the characteristics of the person or their location that determine their selection, but their potential to provide data on a concept of interest.

Theoretical saturation has occurred when no new concepts are emerging for the larger categories in the analysis, when these larger categories are robust and when the relationships between the categories are 'established and validated' (Strauss & Corbin 1990, p. 188). This indicates that no further data were required. As the initial analysis, rather than the complete analysis, was conducted during fieldwork, recruitment ceased when no new concepts are emerging and tentative and incomplete relationships between the categories were apparent.

Sample

Fifty-seven graziers were interviewed over a period of five months. First, 33 graziers were interviewed in 27 interviews in the Gulf location over a period of ten weeks, commencing in June 2002. Then, in the Central West location, 24 graziers were interviewed in 20 interviews over a period of ten weeks. This was completed by the end of October 2002 and was the finishing point for the fieldwork for the main study.

Of the 57 people interviewed, 57 percent were men and 43 percent women. Due to the time constraints and the priority given to conducting the interviews, not all interviewees were asked to complete the one-page questionnaire from which the following information was drawn from. All of those who were asked to complete the questionnaire did so, but some participants left some questions unanswered. Participants ranged in age from 21 years to 70 years, with the largest group of participants being between 45 and 64 years (51 percent) compared with 36 percent of Queenslanders being in this age group (ABS 2002b, p. 9). This may reflect the increased median age for farmers (Barr, Karunaratne & Wilkinson 2005). The next largest group was the 25 to 44 years age group (35 percent) compared with 45 percent of Queenslanders (ABS 2002b, p. 9). Of the sample, 10.5 percent of the sample was 65 years or over, compared with 19 percent of Queenslanders (ABS 2002b, p. 9).

Of the 43 interviewees for whom the level of education was available, the largest group had completed Grade 12 (44 percent) as their highest level of education, 23 percent had completed Grade 10, and the same percentage had completed some form of tertiary education, which ranged from TAFE courses to a bachelor's degree. Ten percent of the sample had completed primary school or less. In this sample the company managers typically had a higher standard of education than the private graziers, with 92 percent of company managers having Grade 12 or tertiary education as their highest level of education, whereas only 54 percent of private graziers did. When these figures were compared with the Queensland population had not

completed Grade 12, 52 percent of the Queensland population had not completed, whereas in this sample only 33 percent had not completed (ABS 2002a, Table B12). Farmers typically have lower educational standards than their urban counterparts (Bourke 2001a; Cary, Webb & Barr 2002; Gray & Lawrence 2001), so this sample has a higher level of formal education than would be expected.

Of the two study participants employed as junior members of staff (known as ringers) on privately owned properties, one is subsequently referred to as a private grazier and the other a company manager because the former was a member of the private grazier family and the other was an employee. Although this is an inaccurate depiction, it allows them to be included in the study, and included anonymously. Where material quoted from these participants has been used, it is where employment status has low relevance.

Of those approached to be involved in the study, two people from the Gulf location and three from the Central West refused. The most common reason given for this was being too busy with existing commitments to participate in research. The study was conducted during winter, the dry season, which was particularly busy for Gulf residents in terms of both work and social commitments.

Of the 37 properties involved in the study approximately half were in each location and 70 percent were privately owned, with the remainder being company owned. The proportion of company properties in the Gulf location (37 percent) was higher than in the Central West (22 percent), which according to informants' advice was consistent with the proportions of company to private properties in each location. Seventy percent of the sample consisted of private graziers and 30 percent of company managers.

Of the 25 privately owned properties in the study for which information was available, 60 percent were purchased, 28 percent inherited and 12 percent reported a combination of purchase and inheritance. The most common type of tenure where this information was collected, was a perpetual lease (54 percent), followed by a pastoral lease (33 percent), then freehold tenure (13 percent). The small proportion of properties with multiple tenure types were allocated to the category of the largest amount of land.

In summary, almost two-thirds of the privately owned properties (for which information was available) were purchased and more than three-quarters of the properties were leasehold. Almost 73 percent of Queensland is held under state leases, and the majority of these are west of the Great Dividing Range (DNRM 2001, p. 6; 2004, p. 1).

Of the sixteen privately owned properties for which information was available, 43 percent had 80 percent or more equity, 21 percent had more than 50 percent equity but less than 80 percent, and 16 percent had 50 percent or less equity. Of the fifteen properties for which information was available, 85 percent of participants received at least 90 percent of their total income from the property. In summary, slightly less than half of the sample (for which information was available) had 80 percent or more percent equity and the majority were financially dependent on the property for their income. The company managers were reliant on their employment for income.

Properties in the sample range in size from 10,000 to 500,000 hectares, with the size of properties in the Central West location generally being smaller than those in the Gulf. All company properties were 100,000 hectares or larger, while the privately owned properties tend to group at the smaller end of the continuum. Equally relevant to size for production purposes are biophysical aspects such as soil type and rainfall of which there was considerable variation within each location (see Tables 4 and 5).

Although I discovered no documentary evidence that private graziers had different perceptions of sustainable development from company managers, anecdotal evidence suggested there may be a difference, so three large and three smaller companies, all of which owned multiple properties, were invited to be involved in the study. I worked with company representatives in the larger companies to access onground managers, and more directly with the smaller companies. One company declined to be involved because the fieldwork was being conducted during winter, their busy season. The proportion of interviews conducted with company managers was based on anecdotal evidence of the proportion of privately owned to company owned properties in each of the geographical locations.

It is acknowledged that Aboriginal Australians operate grazing enterprises. The rationale for not including Aboriginal land managers in this study is that I was advised by my primary supervisor that there was insufficient time with which to appropriately engage with

Aboriginal Australians for this purpose. This advice was confirmed by Aboriginal Australians who operated a non-government organisation concerned with Indigenous land management practices, when I consulted them on this issue. In addition, there are so few grazing enterprises operated by Aboriginal Australians in the areas that I chose to research that their inclusion would have breached the ethical condition of the anonymity of participants.

Design of interviews

In most cases interviews were conducted during a visit to the property, usually of one or two nights. Interviews were of varying length, and at times were conducted over more than one session, to fit around the needs of the participants. I always suggested that the interview be conducted after the evening meal to reduce the impact of the data collection on their work day and to give them some opportunity to get to know me prior to the interview. Some interviews were conducted in the family home and some while I was being given a tour of the property.[8] Where it was opportune, I requested that I be shown the important places on the property. The purpose was to discover what was important in the context of sustainability, to relax the participant and reduce the potential for interruption.

Although my goal was to interview married couples separately to control for partner influences, participants were given a choice. The majority of interviews were conducted with a single participant (77 percent), although in some cases married couples chose to be interviewed together (23 percent). This happened more often in the Gulf location than in the Central West.

The interview was conducted using a list of concepts of interest and issues of relevance developed from a literature review and the exploratory fieldwork. Although Strauss and Corbin (1990) warn against becoming so steeped in the literature that creativity is constrained, they do identify this as an appropriate use of the literature. A list of concepts of interest identifies the areas to be covered in an interview while allowing for the flexibility of following leads and interesting ideas (Kvale 1996). The concepts of interest were adapted as the study progressed (see Appendix B for the list).

Strauss and Corbin (1990) recommend that one become sensitised to existing assumptions about the topic of interest. A pertinent assumption was that graziers were largely responsible

[8] It is customary to show first-time visitors around the property.

for significant environmental degradation, and were either unwilling or unable to address this issue satisfactorily.

An essential element of the interviewing process is gaining the trust of the participant and developing rapport, because the goal of the interview is understanding from the participants' perspective (Fontana & Frey 1994; Minichiello et al. 1995). A benefit of the unstructured interview process is that it accommodates the participant leading the interview. With a female interviewer as in this study, an unstructured process can enhance the rapport-building process with males because of the gendered nature of grazing culture (Gray & Phillips 2001). It can also achieve this with participants older than the interviewer because of the conservative culture of rural areas (Poiner 1990); men and older people were likely to feel comfortable in the lead role and the unstructured process allowed this. This dynamic was prompted by my suggestion at the beginning of each interview with such participants (male and older) that they respond to the question as their thoughts emerged and I would guide them with questions.

Procedure for interviews

Prospective participants were usually approached by telephone. I told them the purpose of the study and provided a brief outline, specifically detailing what it would involve for them, and invited them to participate. I faxed a copy of the Information Sheet and arranged to recontact them in the near future. When I was introduced to prospective participants in person the initial discussion occurred then.

The majority of interviews were conducted at the home or on the property of the grazing family, with the remainder conducted in a nearby town. Interviews were conducted and audio-taped with the participant's consent. Interviews commenced with the question 'Are there any social, economic or land management issues that impact on your ability to meet your needs now and the next generation's ability to meet theirs?' Typically, the question was asked in several parts because discussion was generated by each of the phrases. I deliberately avoided using the term 'sustainable development' because of the lack of clarity that would create (see Chapter 2 for a discussion on how sustainable development is defined), and chose to use everyday language that identified the intergenerational aspects of sustainable development and the social, economic and environmental dimensions (WCED 1987). The term 'land management' was used instead of 'environment' in the interviews for two reasons. First, it was assumed that the term, 'land management', would have more relevance for graziers

because of the many everyday uses of the term ‘environment’. Choosing a general term has been criticised on the grounds that subjects will define the term by making assumptions about how their responses may be used and answering accordingly (Shulman & Penman 1994). This was avoided by the use of the more specific term, ‘land management’. The second reason was because of the many negative connotations associated with the term ‘environment’ for graziers. For example, the strength of the environment movement in Australia (Hutton & Connors 1999) and its association with restrictions on tree clearing, may have created the assumption that their responses would be used in ways they considered inappropriate.

As the study progressed, concepts of interest emerged. Consistent with the Grounded Theory approach, I adapted the interview guide and probed these issues. As per the Grounded Theory approach, I sampled theoretically, which involved selecting study participants on the basis of their potential ability to provide rich information on the concepts of interest.

As soon as was practically possible, the interview was transcribed. Equipment breakdown and the time constraints associated with mail delivery in remote Queensland caused initial delays in transcribing. Once transcribed, interviews were entered into a computer program, NVivo (Richards & Richards 2000), which was used to assist with data management. This program enables the coding of units of text of any size and the development of a hierarchical tree structure which assists with data tracking and retrieval. I employed two people, both of whom were experienced in this type of work, to assist with the transcription of interviews that were not completed during fieldwork.

Interviews were conducted over a period of five months for two reasons. The main one was that it allowed the interviewing and analysis to occur concurrently, which allowed the conceptual development of the analysis and therefore theoretical sampling to occur. It also provided me with the flexibility I needed to fit around the busy work and social schedules of prospective participants. An unexpected advantage of this time period was that it appeared to establish in the mind of the prospective participants that I had a genuine interest in speaking to them, demonstrated by being prepared to work within their time constraints.

A brief questionnaire was completed by the majority of participants at the end of the interview (see Appendix C). The purpose of the questionnaire was to provide background information that would assist with describing the sample, provide context for the analysis and

result in a more nuanced account. The first set of questions involved a description of the property and participants' broad financial circumstances, and the second set was sociodemographic information about the family.

As this was a supplementary form of data, where there was time or other constraints, it was not administered. No one who was asked to complete it refused, but some participants did not answer all of the questions.

Participant observation

Rationale for participant observation

Participant observation was used in this study to gather contextual material to support the data generated from interviewing. Spradley (1980, p. vii, 3) claims that participant observation 'reveals what people think and shows us the cultural meanings they use daily' and helps us to 'understand another way of life from the native point of view'. Goffman (1989, pp. 125-26) defines participant observation as:

> … subjecting yourself, your own body and your own personality, and your own social situation, to the set of contingencies that play upon a set of individuals, so that you can physically and ecologically penetrate their circle of response to their social situation, or their work situation, or their ethnic situation, or whatever. So that you are close to them while they are responding to what life does to them … you're artificially forcing yourself to be turned into something that you then pick up as a witness – not as an interviewer, not as a listener, but as a witness to how they react to what gets done to and around them.

Another point that Goffman (1989, p. 128) makes is that discipline is required, as 'you have to open yourself up in ways you're not in ordinary life' that are not always comfortable. Travers (2001) claims that fieldwork requires great political skills because of the different classes of people with different perspectives who will be involved. Becker (1967) suggests that the fieldworker must make a moral choice about siding with the dominant or subordinate group, and this is where political skills are involved, particularly if one does not want to affiliate with any particular group. This is similar to Goffman's (1989) notion of developing affiliations with upper or lower levels of the hierarchy when conducting research in institutional settings. Relevant to these claims was that I was at first perceived by many participants to be working for the government (reinforced, no doubt, by driving a vehicle with

government registration plates[9]), despite my claims of being a student, so I could not choose my affiliation in this sense. A related point is that I was lobbied by some participants; they wanted an advocate to represent their case to government and others, and subtle pressure was brought to bear by the implication that the assistance they provided by taking part in the study could be reciprocated in this way.

Travers (2001) notes the heavy emotional and physical demands of fieldwork. Goffman (1989, p. 127) suggests that fieldwork strips one's life 'to the bone'. My experience of fieldwork was reflected in these comments. An issue these authors have not addressed that was part of my experience, and provided a balance to the physical and psychological demands of five months of fieldwork, was the inherent rewards of visiting new communities and meeting a range of interesting people who provided me with generous hospitality and stimulating conversation.

The purposeful observations made allowed me to build on tacit knowledge (Guba & Lincoln 1981). The information from the observations gives a context to each participant, a fuller picture of this person. Additionally, observation allowed the gathering of information on non-verbal behaviours, which compensates for one of the disadvantages of audio-taped interviews, which is the absence of this information (Minichiello et al. 1995).

Design of participant observation

I used this method in two ways. The primary purpose was to observe study participants in their own environment. Towards this end, I stayed in the homes of many of the study participants when I went to interview them, usually for one or two nights, with their knowledge of my purpose. A rural background assisted in the development of relationships with participants because many of the unwritten social rules were known to me. Due to the time constraints, at times it was more convenient for me to conduct the interview in a local town or to do a day trip and interview them on their property. This reduced the opportunity for this type of observation.

Out of necessity, because the study locations were a long distance from Brisbane, I stayed in the communities where I was working. I stayed with key informants where possible and was

[9] The University of Queensland sourced the vehicle for the student from the Queensland State government vehicle fleet as this was the most cost effective option.

provided with office space by a government department in each case study location. This approach provided me with opportunities to attend community events and engage with local residents on an everyday basis. Staying in the community, with graziers, and attending community events all provided opportunities to get an in-depth view of the people and places through purposeful observations. This contributed to the development of a nuanced understanding of the grazing families in their communities.

I immersed myself as far as possible in the activities under observation to better understand the beliefs, motivations and behaviours of the study community (Tedlock 2000). Using Gold's (1969) classification of the continuum of roles in participant observation, my primary role was observer-as-participant. This tends to be brief and possibly superficial, creating the opportunity for misunderstandings (Gold 1969). I identified myself as a researcher at any community events where permission to attend was required. A weakness of the observer-as-participant role is that the participant's presence in the setting may affect the social processes being studied, known as the Hawthorne effect (Jary & Jary 1991). On other occasions, my role was closer to participant-as-observer. This was when I was staying with families in the towns of the communities under study and with many of the graziers that I interviewed. In this situation, all parties to the interaction are aware of the relationships and activity. Typically, there were periods of formal observations such as during an interview, and times when observation occurs informally (Gold 1969). There is some danger that this immersion may lead the researcher to identify too much with the interests and viewpoints of the participants (Babbie 2004).

Table 3 lists the specific community events I attended for observation purposes at each study location. This allowed me to meet many prospective participants either before they had made a decision about being involved in the study or after they had agreed to be involved. It also provided opportunities to observe some of the study area.

Table 3: Community events attended

Gulf location	*Central West location*
Normanton: - state school fete - Queensland Arts Council jazz concert	Longreach: - Women's Health night - cattle sale (two) - interagency drinks (state government departments) - flower show - Agforce meeting - Market day - 2004 Olympics fund raising dinner - Lake Eyre Basin Ministerial Forum consultation - Queensland Country Women's Association convention - Department of Premiers' Women and Girls Consultation
Georgetown: - rodeo	Winton: - shop and clearing sale - Winton Health Action Team meeting
Cloncurry: - rodeo	Blackall: - field day on artesian bore capping and piping - town reunion - retirement village visit
Burketown: - river cruise	Barcaldine: - Westech field day - Desert Uplands government consultation
Gregory: - community dinner	Muttaburra: - ram sale

Data recording for participant observation

I collected data through writing a fieldwork journal which commenced with the first exploratory study and continued until all fieldwork was completed. This account contains descriptive, analytical and reflexive accounts of the experience. The recorded observations contribute to a nuanced account of graziers' perceptions of sustainable development.

Study locations

Rationale and selection of study locations

I conducted a case study in two locations for comparative purposes. This is one of the purposes for which case studies are used, the others being exploratory or descriptive (Yin 2003). Yin (2003, pp. 13-14) defines a case study as an inquiry that:

> … investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident … [it] copes with … the situation in which there will be many more variables of interest than data points and … relies on multiple sources of evidence …

One of the strengths of the case study approach is that it contextualises the research issues of interest (Ewing 1997). This approach provides a large amount of data on a few cases, in great depth and detail, enabling the development of a familiarity with people's lives and culture (Neuman 1994). This was consistent with the needs of an exploratory study where a low level of information exists about the topic.

The potential benefit of two locations in a case study was that if the findings from each location are analytically consistent, replication can be claimed (Yin 2003). In addition, the evidence from two locations as opposed to one is considered more compelling and more robust (Yin 2003). The two locations can still be used for comparative purposes, such as in this case where the comparison was a geographical unit of analysis.

Several factors influenced my choice of case study location. The major land use in the tropical savannas is pastoralism (TS CRC 2005a, 2005b), so the sponsorship provided by the Cooperative Research Centre for Tropical Savannas Management (TS CRC) which determined that the study be conducted within the geographical area covered by the TS CRC (see Figure 1) was appropriate. Being a Brisbane-based student suggested Queensland locations. I made direct contact with a one community to avoid the bias inherent in relying on

a government department to engage study participants and avoid the hostility from graziers towards the three state government departments that typically introduce researchers to participants in natural resource management research. This community was the Central West, which was the closest location to Brisbane and included in the TS CRC area. The final factor for selection was opportunism. The Gulf location resulted from contacts made during a study tour conducted by the TS CRC in which I was invited to participate in my role as a student of the TS CRC.

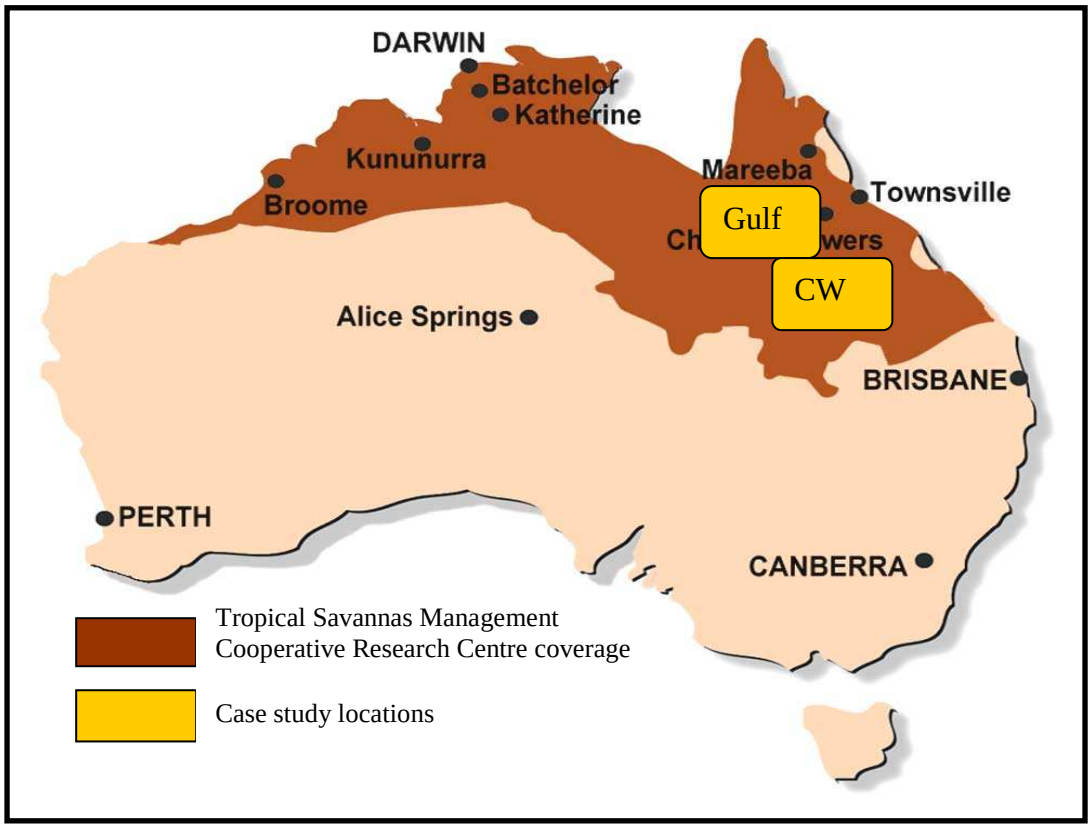

Figure 1: Cooperative Research Centre for Tropical Savannas Management and study locations.

Source: Cooperative Research Centre for Tropical Savannas Management

Exploratory contact

The purpose of the exploratory work was to develop an understanding of the area, the people and their issues. It assisted me to understand the context of life for graziers in rural Queensland. Specifically, it allowed me to meet people in person and some of these people became key informants. The discussions that took place helped me to develop a list of concepts for the interviews.

Central West

During a four-month period (see Table 2) informal discussions were conducted with approximately 40 people in the Central West of Queensland by email, telephone and in person. These people were identified through networking which commenced with a community development worker in the town of Longreach. Typically, people filling this role are well networked with their community in order to conduct their work. Through this person, I developed a network of people in the area. Through informal discussions I asked them what the significant issues were for the area, and whether there were any social, economic or land management issues. The majority of people were graziers, but there were also members of local government, people who ran businesses in town, retirees, public servants who worked in natural resource management, members of volunteer organisations and non-government organisations and social welfare workers.

Gulf

In January 2002 the TS CRC organised three meetings over four days with residents of the Gulf of Carpentaria, Queensland (see Table 2). The purpose of the meetings was to share information about research being funded by the TS CRC and to elicit from local residents what their research needs were. The majority of the approximately 60 people involved were graziers. However, there were also members of local government, public servants, researchers, representatives from non-government organisations and businesses.

There were several outcomes from the exploratory studies in the Central West and Gulf. The significant outcome was that key informants and others in each community supported the inclusion of that location as a case study location in the main study. This included a government department offering to arrange office accommodation in each location, offers of referrals to potential interviews and offers of accommodation. Several themes emerged from an analysis of the formal and informal discussions that took place in both areas. These assisted in the identification of concepts and issues relevant to graziers' perceptions of sustainable development.

Location 1: Gulf of Carpentaria, Queensland

Table 4 shows relevant geographical, biophysical and social characteristics for the Gulf of Carpentaria location, some of which was drawn from the literature (Tothill & Gillies 1992; TS CRC 2005a) and some from the fieldwork.

The towns of Burketown, Normanton, Karumba, Georgetown, Julia Creek, Cloncurry and Mt Isa outline the area within which the study was conducted. A more precise definition than this has the potential to lead to the identification of study participants. A condition of participation I offered participants was that I would not identify them.

Table 4: Gulf of Carpentaria location: Social, geographical and biophysical characteristics

Characteristics	*Descriptions*
Land type	Variety: rocky uplands to rich alluvial river flats
Land use	Grazing: poor fertility and very low carrying capacity; mining; tourism
Rainfall	400–800 millilitres per year
Rivers	Norman, Alexandra, Leichhardt, Gregory, Albert, Einsleigh, Nicholson, Flinders, Mitchell, Gilbert
Vegetation	Lightly wooded grassland; some paperbark, wattle, stringybark, bloodwood, snappy gum and box wood; some Flinders, Mitchell grass and Spinifex
Towns	Georgetown, Normanton, Karumba, Burketown, Mt Isa, Cloncurry, Julia Creek, Gregory
Property size range	10,000–500,000 hectares (study sample)
Type of tenure	Leasehold
Property ownership	Approximately two-thirds family owned and one-third company owned

Location 2: Central West, Queensland

Table 5 shows some geographical, biophysical and social characteristics of the Central West location, which was drawn from the literature (Tothill & Gillies 1992; TS CRC 2005b) and fieldwork. The towns/settlements of Winton, Corfield, Muttaburra, Aramac, Blackall and

Stonehenge outline the area within which the study was conducted. Again, a more precise definition has the potential to lead to the identification of study participants.

Table 5: Central West location: Social, geographical and biophysical characteristics

Characteristics	*Descriptions*
Land type	Predominantly the treeless plains of the Mitchell grasslands, also red desert country (Desert Uplands)
Land use	Grazing: on the relatively fertile clay cracking soils supporting Mitchell grass
Rainfall	400–600 millilitres per year; variable
Rivers	Georgina, Cooper's Creek, Diamantina, Thompson
Ground water	Great Artesian Basin
Vegetation	Predominantly Mitchell grass, some gidgee and coolibah
Towns	Winton, Longreach, Muttaburra, Barcaldine, Aramac, Blackall
Property size range	10,000–420,000 hectares (study sample)
Type of tenure	50:50 mixture of freehold and leasehold
Property ownership	Primarily family owned and run

Similarities and differences between the study locations

Both study locations were situated in the tropical savannas, which covers more than one-fifth of Australia, and is located in northern Australia, from the Indian to Pacific Oceans (Roberts et al. 1998, p. 5) (see Figure 1). This area is typified by grasslands with a scattering of trees (Ritter 2003) and the major landuse is pastoralism (TS CRC 2005a, 2005b). The study locations were also within the much larger Australian rangelands, which covers 75 percent of Australia, primarily in arid and semi-arid regions where landuse is characterised by extensive grazing of native pastures (Fargher et al. 2003, p. 141).[10]

There is not a consensus in the literature on whether broadscale and significant environmental degradation has occurred in northern Australia (CIE 1997). A seminal work on the pasture lands of northern Australia found 'widespread deterioration in most pasture communities in Queensland', largely through increased grazing pressure (Tothill & Gillies 1992, p. v). It was considered possible to reverse this through changed property management. The National Land

[10] The northern rangelands in Queensland overlap significantly with the tropical savannas.

and Water Resources Audit's Australian Dryland Salinity Assessment in 2000 found that northern Australian had far less dryland salinity than temperate areas (NLWRA 2001). A concern held about the rangelands is that, because of its low productivity, the rehabilitation of degraded land is unlikely to be economically viable because the cost of rehabilitation is greater than the value of the land (CIE 1997). This makes prevention of particular importance.

The Desert Uplands, which comprises part of the Central West study location was declared a designated area in 1996, which recognised a decline in living standards, business viability and in the region's natural environment (Desert Uplands Build-up and Development Committee 1996). This information suggests that some environmental damage has occurred here.

All of the Australian Bureau of Statistics statistical local areas in both study locations experience a level of socioeconomic well-being below the Australian average, and are in the most remote category of the Accessibility/Remoteness Index of Australia, which is a measure of remoteness from services (Haberkorn et al. 1999, p. 95). Dale and Bellamy (1998) claim that because of the pressures of grazing, mining, tourism and Indigenous issues in the rangelands and the changes brought about by advanced technology, it has been important to maintain a sustainable grazing industry and preserve the social fabric by resolving conflicts between different land uses. They consider that many rangelands regions face challenges in relation to their long-term economic and ecological viability.

In the Gulf, there is a distinct seasonality with precipitation similar to a tropical monsoon climate. There are distinct wet and dry seasons, with the weather becoming very hot just before the wet season and the high humidity in the wet season creating uncomfortable conditions. There is a long dry period during winter where warm and dry air masses dominate (Ritter 2003). The Gulf has extremes – particularly high temperatures, humidity and rainfall in the summer, which restrict movement and operations. The Central West on the Tropic of Capricorn experiences fewer extremes in temperature, humidity and rainfall, allowing work to continue most of the year. When operations cease in the Central West, it is because of the high temperatures rather than the humidity.

In the Central West, the soil is generally more fertile, the surface water (rivers) and rainfall less than in the Gulf. However, the Great Artesian Basin provides a permanent source of water in both study locations, accessed through bores. Properties were larger in the Gulf than

in the Central West, and most land is leased. There is a lower population density in the Gulf than the Central West.

Data analysis

The decision about what to study and how to gather the data rules out other areas and already begins to focus the subsequent analysis (Miles & Huberman 1994). Therefore I acknowledge that some analytical decisions were made well prior to data collection.

The coding and analysis of text was the first stage in the process of data analysis. The initial data analysis was conducted after several interviews. Subsequently, between 3 and 5 interviews were conducted, then another round of analysis was conducted. The time frame varied in relation to the availability of interviewees. Initially, concepts were identified and named from each sentence or paragraph of the transcript. Some concept names are descriptive (for example 'over-grazing'), others interpretive (for example, 'passion') (Strauss & Corbin 1990). Frequently, multiple concepts were identified in the same passage of text, adding to the richness of the analysis.

Initial concepts were derived from the first round of interviews, then similar concepts were grouped into categories, which are conceptually more abstract. Then more data were collected and analysed using this same process. The analysis involved comparing this later text to the existing concepts and categories. This process sometimes led to further concepts and/or categories being developed or existing ones changed or added to. This iterative process which involves firstly the identification of concepts and categories, the generation of more data, then comparing this data with the existing concepts and categories, coding text to existing concepts and/or creating new concepts or categories, to build the conceptual analysis, is known as the constant comparative method (Dey 1999; Strauss & Corbin 1990; Travers 2001). As this process continues the categories are filled out with the concepts and developed in terms of how they are related (Strauss 1987; Strauss & Corbin 1990). The concept and category names are modified where necessary to accurately reflect their contents. A theme analysis is where the categories are grouped under a conceptually more abstract label. The highest conceptual level is at the theme level, then less conceptually abstract are the categories within each theme, followed by the concepts that make up the categories. The text is coded at the concept level. An example of coding is provided in Appendix D.

Each round of interviews and analysis confirmed the importance of some of the existing concepts of interest, suggested some were of lesser importance and produced new concepts of interest. In this way the content of the interviews changed slightly over the period of data collection, to include all of the concepts that were of continued interest, though always within the broad research question.

This conceptual analysis provided a focus for subsequent interviews and drove the selection of later participants. This refers to theoretical sampling, where participants are selected for their potential to provide information on the concepts of interest. Main points from some of the earlier analyses were shared with participants at the completion of their interview.

As interviewing and analysis proceeded, ideas about how concepts and categories may have been related, ideas for new categories and new questions were documented in memo form or recorded in a journal, and these leads were pursued in subsequent interviews and analysis. Memos were written commencing with the discussions about conducting the study, and continued over its duration (Strauss & Corbin 1990). They were written during the coding of the transcripts, from journal notes and participant observation, as ideas suggesting relationships between concepts emerged which assisted with category development (Strauss & Corbin 1990). Two additional tools incorporated into the journal were used to assist with data interpretation. Both of these tools combined interview and observational data. The purpose of the Contact Summary Sheet (Miles & Huberman 1994, p. 53) (Appendix E), which was completed after the transcription of most interviews, was to summarise the information gathered, and identify gaps, insights, salient issues and new questions. A Debriefing document (Appendix F), which had a primary focus of reviewing the quality of the process but also served to identify patterns and elicit insights, was completed on a regular basis during fieldwork.

The final coding framework for the study, which was the outcome of many iterations, is in Appendix G. Inductive analysis led the process of framework development and evolution, during the five months of fieldwork. Concepts were given descriptive or analytic labels that sought to describe the concept, as stated. Later analyses were complemented by searching the literature. For example it became apparent that there was a set of circumstances that combined the physical location of the graziers, the attributes of the industry and climate – the context within which they operated – that they perceived as a constraint. I investigated the

sociological literature that reported on structural change in Australian agriculture, which assisted with my interpretation and analysis of this area. Where my conceptual analysis was consistent with concepts in the literature I endeavoured to choose labels that reflected terms in the literature to aid the reader's understanding. An example of this is the use of the label 'agrarian fundamentalism'. In some instances I was unable to locate any literature on the topic in the agriculture area. An example is that for some, owning a grazing property is the realisation of a dream. In these circumstances I retained the label name from the interviews, which in this example is 'realising a dream'. In NVivo, the interview text is coded at the lowest level in the framework. For example all the interview text that was coded as family pressures being one of the hardships of the grazing way of life, is attached to the code 'family pressures'. The three results chapters represent the three main themes in the analysis.

This process of data collection and analysis resembles Lincoln and Guba's (1985) description of persistent observation as a strategy to enhance credibility. This is where the salient characteristics and elements of a situation were identified through tentative labelling, which is followed by detailed exploration to determine their importance. Then the process of labelling and checking must be described. Identifying the characteristics and elements in the situation that are most relevant, and focusing on them in detail, both help give depth to the study (Lincoln & Guba 1985).

The use of the constant comparative method is also comparable to the process of negative case analysis, or the refining of hypotheses as more information becomes available, as a way of enhancing credibility or authenticity (Lincoln & Guba 1985; Miles & Huberman 1994). The constant comparative method ensures that the categories and properties are well integrated and enhances rigour (Corbin & Strauss 1990).

The transcripts, memos and conceptual analyses that were the documentation of the process of data generation and analysis, provide the basis of an audit trail which promotes confirmability (Miles & Huberman 1994). It allows an assessment of whether the findings were grounded in the data, whether the inferences based on the data were logical, and how appropriate the category labels and the explanatory power of the category structure were. This confirmability is a measure of rigour and authenticity (Lincoln & Guba 1985; Miles & Huberman 1994). The

documentation process leads to ‘member checking’ (Lincoln & Guba 1985, p. 18) as a way of improving authenticity.

Informal member checking occurred by asking selected participants to comment on the analysis as the study progressed. An issue that arose early in the study was that participants wanted their story told, but also wanted it to be told correctly. They reported that other people had asked them similar questions to those asked in this study, and two participants indicated that although *a* story had been told it was not *their* story and there was a sense of having been betrayed. Sharing the analysis as it evolved (see ‘member checks’) contributed to trust building, and it also provided confirmation of the early findings. Participants agreed that the analysis developed at this stage reflected their perceptions and the sharing of this analysis typically prompted further discussion.

Theoretical sampling and the constant comparative method were used to fill out existing categories by suggesting new directions to pursue. This process continued until very few new concepts were being identified in an interview. Data analysis continued during data generation and subsequently, using the above procedures and being guided by the observations made during the interviews.

At the conclusion of the first study location (Gulf), I had a choice of closing that analysis, commencing a new analysis for the second location and presenting the results for each of these separately, or continuing the existing analysis. The conceptual framework at the completion of the first study location was very broad and it appeared to be quite comprehensive. There were three categories at the most abstract level. ‘Running a property’ included: the business, land management, drought, financial management, staffing, learning, stock, governance issues, participation, policy, tenure, native title and markets. ‘Processes’ included: change, policy, skills, loss, institutional consequences, participation, politics, governing, Aboriginal land rights, native title and outcomes. ‘Subtle things’ included: bush culture, formal and informal learning, people, women, unity, practicality and scale. There were up to six levels of coding, for example: Bush\Running a property\direct\business\employees\labour shortage. Although I anticipated differences in the second location, I believed that the conceptual framework from the first location would accommodate them, because of this breadth and the level of comprehensiveness. The use of inductive analysis combined with the constant comparative method, allows new concepts to

emerge as the study progresses, so where differences between the study locations existed, this approach would allow the differences to appear. Finally, because one of the codes applied to each transcript was ‘study location’, this would allow for the construction of two separate conceptual frameworks, after the analysis had been completed, if needed. These reasons suggested that continuing the existing analysis would be the appropriate strategy. Because the final analysis showed few differences of significance between the study locations, the results have been reported as one analysis, noting where distinctions are evident and summarising these in Chapter 7.

After the completion of the fieldwork, two formal member checks were conducted. The first involved mailing to each participant two brief reports of the findings and requesting feedback. This assumes that members will readily understand the process of data reconstruction and comprehend the conceptual level of the analysis. The feedback received confirmed the findings. The second formal member check entailed a field visit and face-to-face or telephone discussions with 26 of the study participants (all private graziers) and others during which the study results were discussed. These 26 participants were spoken to over a two-week field trip. I spoke to fifteen people in-person, either at a meeting at which I presented my analysis, or by visiting them on their property. The remaining 11 people I spoke to by telephone. Participants were selected on their availability during this two-week period. Whether I visited in-person or spoke to participants by telephone was determined by mutual availability and by road access. The rainy season commenced in the Gulf during my brief trip and some roads were cut resulting in my inability to visit in person.

Participants indicated that they agreed with my analysis and most contributed further detail. The outcome of a formal presentation made to a group of graziers in the Central West was their confirmation that this analysis was consistent with their views on the topic. Informal discussions were undertaken with a number of participants during the follow-up period (see Table 2), including senior staff from some of the pastoral companies involved in the study. The findings discussed with participants on these occasions were confirmed.

Study limitations

A primary criticism of the interpretive approach is that its goal is to understand, rather than to establish causal relationships (Schwandt 2000). However, ‘understanding’ is its chief strength (Babbie 1992). Weaknesses of the interpretative approach are that it rarely provides ‘precise

descriptive statements about a large population' (Babbie 1992, p. 306) as quantitative research often does; and the conclusions are often considered to be suggestive rather than definitive because of the limited ability to generalise to a larger population and replicate the research (Babbie 1992). Although Neuman (1994) claims that it is virtually impossible to replicate field research (an interpretative method), careful and detailed documentation of the approach enhances the possibility of replication.

Although Grounded Theory methodology grew out of the interpretative tradition known as the Chicago School (Travers 2001), the approach developed by Glaser and Strauss (1968) has been criticised for moving too far from these intellectual roots because of the focus on developing theory rather than on 'rich descriptions of local settings' (Travers 2001, p. 59). However, Charmaz (2000) and others (see Annells 1996) claim that the tools of Grounded Theory can be effectively used by those using a constructivist or a positivist paradigm. Another criticism is that coding the data fractures it because events are removed from their context. This makes it difficult to portray the subjects' experience fully (Alvesson & Skoldberg 2000; Charmaz 2000). A criticism about the output of a Grounded Theory study is that it can create trivial knowledge which is readily assumed, especially for the amount of work invested (Alvesson & Skoldberg 2000). However, this criticism would not apply where no previous work or limited work has been conducted, as in this study.

The case study approach is criticised for its lack of rigour, the inability to generalise to broader populations and because it is resource intensive (Yin 2003). The lack of rigour is often associated with a failure to take a systematic approach and the presence of bias. The documentation of the approach taken with this study demonstrates a systematic approach but acknowledges that data are socially constructed and therefore influenced by the researcher. Yin (2003) agrees that, although findings from case studies cannot be generalised to the broader population, they can be generalised to theoretical propositions. In addition, the evidence from two study locations in the one case study as in the current work, as opposed to one location, is considered more compelling and more robust (Yin 2003).

Ideally the progress of the study would have been slower, to allow a more sophisticated level of analysis to have occurred during the fieldwork. Although the fieldwork was sponsored by the TS CRC and in-kind support from many of the study participants through their hospitality, there were time and financial constraints. I may have developed a more nuanced account if I

had transcribed all of the interviews personally, but I chose to concentrate my time on the analysis rather than transcription.

Quality of conclusions – trustworthiness

The quality of the conclusions drawn from an interpretative qualitative approach centre on whether they can be trusted to be dependable and authentic, and are confirmable. Several techniques were used to establish or demonstrate the trustworthiness of the conclusions reached in this study. Much of this is embedded in text earlier in the chapter, but it is highlighted here, whereas other techniques are reported below in some detail. Ultimately, however, because of the nature of qualitative research, the readers draw their own conclusions about trustworthiness and rigour.

Dependability refers to whether the research was of adequate quality in terms of the congruence between the approach and methods, and whether there was technical consistency throughout the study (Miles & Huberman 1994). Authenticity is whether the conclusions are considered credible; confirmability is about whether the conduct of the study is transparent and whether the conclusions reached flow from the approach used (Miles & Huberman 1994).

A transparent account of the process was provided through a detailed description of the methods and procedures – how the data was collected then how it was analysed; this provides an audit trail and enhances confirmability. The dependability of the study was enhanced by appropriately matching the study design to the research questions (Miles & Huberman 1994). In Chapters 4 to 6 (the results) comments are linked with the descriptive or analytical codes and the points made in the text. The diversity of study participants in terms of age, gender, participant status (private grazier or company manager) and location augments the dependability of the study (Miles & Huberman 1994). The use of multiple voicing to report, among other things, diversity of opinion was an inherent part of this study, through the use of quotes from the majority of the 57 study participants (Gergen & Gergen 2000). Comments made by participants were used to illustrate and provide a richer understanding of the points made in the analysis. The use of the constant comparative method to build the conceptual analysis, combined with member checking, promotes confirmability and authenticity of the conclusions. The endorsement by study participants of the study results through member checks implies authenticity.

Reflexivity is a technique with the potential to enhance confirmability. This is where the researchers report what they believe their influences on their research and their biases were, through demonstrating their position, investments and omissions (Gergen & Gergen 2000). Researcher bias can reduce the credibility of the study where data were created by the interaction between the researcher and the participant (Lincoln & Guba 1985; Olesen 1994). I have used reflexivity to a degree by positioning myself in this study. A rural background and a decade of employment as a social worker (with some time in a rural area) provided familiarity with the culture, and enhanced my ability to build the rapport necessary to enable these people to openly and comfortably discuss their perceptions (Minichiello et al. 1995). It also helped achieve the aims of prolonged engagement (Lincoln & Guba 1985), which are to learn the culture, test for misinformation and build trust which enhances dependability (Miles & Huberman 1994). However, the positioning may well have blinded me to other aspects. This background also created preconceived ideas about the topic and people. Examples of my preconceived ideas are that the social dimension of sustainable development was of fundamental importance and that there was substantial diversity among graziers who I see in a relatively favourable way. These ideas influenced data collection and analysis.

The use of triangulation enhances dependability (Miles & Huberman 1994). Campbell and Fiske (1959) first used triangulation in the social sciences by arguing that using more than one method in the validation process ensured that the variance reflected the trait and not the method (Jick 1979). Denzin (1970) expanded the concept by identifying different types of triangulation, all of which have the purpose of strengthening confidence in the findings by overcoming the bias inherent in a single method, investigator, data source or theory, and increasing the accuracy of the findings because different methods highlight different aspects of a phenomenon. By using multiple methods, investigators, data and/or theories to examine the same phenomenon, it is postulated that comparable findings indicate increased accuracy of the findings. Methodological triangulation, also called between-method triangulation was used in this study by combining in-depth interviews and participation observation.

Conclusions

This chapter described how an interpretive approach was used to elicit from graziers their perceptions of sustainable development. A triangulated approach was taken to enhance the rigour of this exploratory work. The primary method was in-depth unstructured interviews, which was complemented by participant observation, in a case study in two locations.

Unstructured interviews provided much of the data, with participant observation providing guidance in how to interpret it. The practice of conducting interviews, analysing the data, then conducting further interviews guided by the analysis has provided in inductive and grounded analysis. How the data were collected and analysed contributed to the trustworthiness of the conclusions drawn from the study.

The next three chapters lay out the main findings from the study. Chapter 7 positions this within the literature.

Chapter 4: The grazing way of life

Introduction

As argued in Chapter 1, the rationale for conducting this study was to acquire an in-depth understanding of graziers' perceptions of sustainable development. A result of the emphasis on the economic and environmental dimensions of sustainable development is that less focus has been placed on the social dimension. In addition, although graziers and farmers are responsible for the day-to-day management of most land in rural Queensland, little investigation has been conducted into how they interpret sustainable development.

When I asked study participants whether there were any social, economic or land management issues that impacted on their ability to meet their needs or their children's ability to meet theirs, their responses demonstrated that they believed these three dimensions were interrelated. However, the analysis revealed three distinct themes. Each of these is presented as a results chapter. The themes are: the social component of farming (Chapter 4); enterprise management, which is how they achieve financial viability (Chapter 5); and the context within which they operate and the challenges they perceive (Chapter 6). In Chapters 4 and 6 there is a property level view whereas in Chapter 6 the broader perspective is taken.

In each of these chapters I use the graziers' voices to illustrate the points made in the analysis, however, as reported in Chapter 3, pseudonyms have been used to protect privacy. In Chapter 7 I discuss these results in the context of how graziers interpret sustainable development and what the implications are for this interpretation.

As the elements of the grazing way of life emerged from the analysis it became apparent that when combined, they described a particular way of life. This facet of farming was understated in the interviews, and did not emerge as an important result until later analyses. By comparison, enterprise management (Chapter 5) was a subject about which these graziers spoke at length and in-depth and it was clearly an area that was important to a thesis about sustainable development. Equally, the 'context and challenges' (Chapter 6) were areas that the graziers highlighted as important.

It became apparent that these graziers perceived the social dimension of sustainable development in two different ways. One of these is 'social sustainability', the subject of this chapter. For the private graziers and company managers in this study social sustainability meant staying in rural Queensland and continuing their preferred way of life. This confirms one of Vanclay's principles of agricultural extension, which is that for farmers 'sustainability meant staying on the farm' (2004, p. 215). The second way study participants perceived the social dimension of sustainable development is consistent with the notion of intragenerational and intergenerational equity, and this perspective is reported in Chapter 5.

I have labelled the social component of farming 'the grazing way of life', and have used quotes from the interviews with the private graziers and company managers to illustrate the seven elements of this way of life. In choosing this label, it is not my intention to imply that all graziers experience or seek this way of life. Rather, it is a phrase that serves to combine the seven elements.

I consulted the literature to assist me with sharpening the boundaries of the concepts that underpinned the elements, and with naming the elements. For each of the elements, I compared the data with concepts from the literature, where it was available. The result is a set of elements which contains both those that are conceptually consistent with concepts previously identified, and those that have received limited investigation. The labels drawn from the literature are: agrarian fundamentalism, the rural idyll, the lifestyle, the hardships, challenges and satisfaction. However, for some elements the terms used in the literature were identical to the terms used by study participants. Where the contents of the elements in this study differ from the content of the concepts in the literature, this is identified.

Elements of the grazing way of life

The way of life graziers lead has a history of well over a hundred years in Australia. It has offered them the rewards they seek but has also subjected them to challenges. It is understood that graziers live a particular lifestyle and hold particular attitudes and values (Alston 1997; Gray & Lawrence 2001; Gray & Phillips 2001; Poiner 1990). This chapter extends this knowledge by providing insights into why graziers continue what is an often difficult, and for many a financially unrewarding, lifestyle. The remainder of the chapter describes the elements of the grazing way of life that have emerged from this study.

1. Agrarian fundamentalism

Views were expressed which indicated a belief that agriculture was the foundation of economic development in Australia. It was this that made family farmers and farming inherently important. These views are consistent with the concept of agrarian fundamentalism, which is a set of beliefs in which pastoralism is seen as 'the foundation of economic development and activity' and 'privileges the family farm' (Gill 2005, p. 44).

Agrarian fundamentalism is one aspect of agrarianism. Montmarquet (1989, p. viii) defines agrarianism as 'the idea that agriculture and those whose occupation involves agriculture are especially important and valuable elements of society'. The notion that farmers and farming are inherently important has a long history in Australia, referred to in Chapter 2.

Much of the research conducted on agrarianism stemmed from the three tenets of agrarianism which are normative beliefs about farmers and farming, and were identified by Johnstone (1940):

1. The independence of the farmer and farm family.
2. The belief that agriculture is the basic industry.
3. Farming is the most natural and best life for people.

These tenets are consistent with, but extend, Montmarquet's (1989) description of agrarianism. Studies using measures developed from Johnston's (1940) tenets have found evidence of agrarianism in the United states and Australia (Beus & Dunlap 1994; Buttel & Flinn 1975; Carlson & McLeod 1978; Craig & Phillips 1983; Dalecki & Coughenour 1992; Flinn & Johnson 1974; Halpin & Martin 1996; Molnar & Wu 1989; Singer & De Sousa 1983). The consistency of agrarianism across farmer and non-farmer populations, low correlations between items and differences on individual items in questionnaire measures suggest that agrarianism is a multidimensional concept (Beus & Dunlap 1994; Carlson & McLeod 1978; Flinn & Johnson 1974). When two studies factor-analysed different measures of agrarianism, both found several factors; the factors were similar but had a different order (see Table 6). The factors of 'agrarian fundamentalism' and 'farm fundamentalism' reflect Johnstone's (1940) second tenet, 'agriculture is the basic industry', and all of these are consistent with the concept of agrarian fundamentalism. The privileging of the family farm, which is a component of agrarian fundamentalism, is mirrored in Johnstone's (1940) first and

third tenets, but more so with the factors: 'the farm family should be supported' and 'family farms are important'. The views of the graziers are compared with these tenets and factors of agrarianism.

Table 6: Factors of agrarianism: Dalecki and Coughenour (1992); Beus and Dunlap (1994) *

Dalecki and Coughenour (1992)	*Beus and Dunlap (1994)*
1. The farm family should be supported	1. Farm fundamentalism: agriculture is the most basic occupation
2. Agrarian fundamentalism: agriculture is the most basic industry	2. Agricultural naturalism
3. Economic independence of farmers is important	3. Family farms are important
4. A farm lifestyle/agrarian naturalism	4. Economic independence of farmers is important

* Factors are listed in rank order by the proportion of variance explained.

Beliefs expressed by some graziers that agriculture had significant national importance, are consistent with Johnstone's (1940) second tenet that agriculture is the basic industry, and the 'agrarian fundamentalism' and 'farm fundamentalism' factors (Beus & Dunlap 1994; Dalecki & Coughenour 1992). This belief is apparent in a comment from *Bob*, a private grazier in his 60s from the Gulf:

> … what underpins this area and a lot of areas throughout the nation is an industry called the cattle industry … we've got mining industries, which is very, very much an integral part, we've got the tourism industry ... the cattle industry still underpins, it has done since day one and continues to do so and you put that into a national perspective … this … community is underpinned by the cattle industry, not by the bloody tourist industry, not by Landcare industry, it's underpinned by the cattle industry, and to a lesser degree the mining industry, I suppose.

Another illustration of the perceived importance of agriculture to the nation was from *George*, also in his 60s and a private grazier, but this time from the Central West. He said:

> … complete imbalance … when it's all said and done … primary production is a big proportion as to what keeps this country, because it's all nearly export and it is what's keeping this country wealthy. Now if you squash that, exactly what does the city produce that's going to produce a big income for this nation?

Laura, a young woman from a large Gulf property, had beliefs consistent with the older males. She said: '… people in the city forget that people in the bush are important … I think that what we do out here is so important and it keeps Australia level'.

These views raised several points of interest. All suggested that agriculture was fundamental in some way. The first comment described the cattle industry as 'underpinning' Australia, the second indicated that it kept Australia wealthy and the third expressed the view that it kept Australia 'level'. The implication was that without agriculture, Australia's fortunes would decline – at least economically. The first comment stated and the others intimated that this principal role of agriculture was long-term and continuing. The last two comments compared the country with the city, which reflects Johnstone's (1940) third tenet, 'farming is the most natural and best life for people', where the country is viewed as inherently better than the city, consistent with the broader concept of agrarianism. During data collection in the Gulf I wrote a memo labelled 'fundamental' because repeatedly I was hearing that the bush was fundamental in some way, either through providing an income to graziers, it being important in their lives and even the bush being central to all of Australia which included urban residents. A related memo is labelled 'bush happy'. I wrote this when an interviewee used the term. The label captured a set of sentiments and a process. The process involved losing a connection with the world beyond the property largely because of the physical isolation of the location, then maintaining that lower level of connectedness. The sentiments expressed were a contentedness with the absence of people and activities that were not directly relevant to their life.

The family farm was the point of reference for others – the fundamental importance of the family farm and the moral obligation that existed to support farmers. These ideas were consistent with the factors: 'the farm family should be supported' and 'family farms are important' (see Table 6). The following statements illustrate these ideas. *Lawrence*, a private grazier in his 40s on a large Gulf property, remarked: 'My father said that we're the goose that lays the golden egg, primary producers. They've got to look after us'. *Hugh* was also a private grazier in his 40s, but on a small property in the Central West that he had inherited. He identified clearly that he thought farmers should be supported:

> … the government and the rest of the people in Australia don't give enough credit to the people on the land, for what they do and the conditions they work under … there should be people out there in the system that are making sure that farmers don't go

> broke or … they're not allowed to borrow the money to go into things that are irretrievably headed for doom.

These remarks privilege the family farm. What they have in common is the idea that farmers should be supported, but they offer different rationales for this. The first comment implies that because farming plays a fundamental role in the economy, government should make a smart choice and ensure that 'the goose that lays the golden egg' was looked after. The second comment has a strong moral tone, which reflects the sentiment *Laura* expressed previously; that city people undervalue country people. The belief that underlies the second comment is the view that, because farmers are inherently valuable, they should be protected against their own weaknesses.

Perhaps unsurprisingly, men were more likely than women to make comments that were coded as agrarian fundamentalism, and private graziers were more likely than company managers to do so. While men interviewed alone talked about the importance of agriculture to the nation, the focus of couple interviews was the importance of the family farm, but it was the men who made the comments.

The quotes above demonstrate that graziers in this study believe agriculture was the foundation of economic development in Australia, which is consistent with the concept of agrarian fundamentalism. Flowing from this belief, farmers and farming are considered to be inherently valuable. This is consistent with Montmarquet's (1989) description that farmers and farming are important and valuable, Johnstone's (1940) tenet that agriculture is the basic industry, Dalecki and Coughenour's (1992) first and second factor (the farm family should be supported; agrarian fundamentalism) and Beus and Dunlap's (1994) first and third factor (farm fundamentalism; family farms are important). This evidence confirms that the labelling of agrarian fundamentalism as an element of the grazing way of life is appropriate.

2. The rural idyll

Statements were made that the landscape had aesthetic appeal, the location provided valued attributes for child rearing and the communities provided support. These ideas are consistent with the notion of the rural idyll, which infers that life in rural areas is inherently good and pleasing. The concept of the rural idyll appears to have its beginnings in the Golden Age of Arcadia, a mythical time of abundance, tranquillity and ease which combined an aesthetic ideal in nature with a romantic, nostalgic view of rural life (Bunce 1994; Montmarquet 1989).

It is seen in the poetry of Hesiod, Virgil and Theocritus (Alpers 1979; Bunce 1994; Burch 1971; Montmarquet 1989; Rieu 1954), later in Renaissance poetry and Shakespearian drama (Bunce 1994) and more recently in poetry by Wordsworth and Walt Whitman. The land is the physical symbol, but the ideals it represents give agricultural life a role beyond production (Bunce 1994). Short (1991, p. 30) refers to this as the pastoral myth, where agricultural life is argued to be 'more wholesome, more spiritually nourishing, more natural'.

The idealised past rests on the idea that rural life is more fulfilling because of the close association with the soil and dependence on a physical environment (Bunce 1994). The nostalgia springs from the loss of this way of life (Burch 1971; Lowe 1989). Always, the comparison is made with a lesser city life, particularly post-industrialisation (Bunce 1994). These contrasts are often characterised as a wholesome, satisfying, harmonious, virtuous, peaceful and pleasant country life compared with a dangerous, unhealthy, artificial, disorganised and unnatural city life (Anderson 2004; Davison 2005; Poiner 1990).

The core components of the rural idyll are the wholesomeness of a life lived close to the land, particularly when compared with the city, and the aesthetic appeal of the landscape. This contrasts with agrarianism which is a set of normative beliefs about the importance and inherent worth of farmers and farming. Some data included in the rural idyll element could have fitted under the broad heading of agrarianism with Johnstone's (1940) third tenet and the agricultural naturalism factors (Table 6). However, the aesthetic appeal of the landscape is not included in the concept of agrarianism, and the story in this area of the results appeared to be more about the experience of living on the land and the beauty of the bush, which is broader than agrarianism.

Many spoke of the beauty of the landscape and the following words are illustrative of how the landscape was perceived. *Margaret*, a company employee in her 30s on a large Gulf property, spoke of the beauty and size with these words: 'I love it so much … it's the vastness of beautiful country … it's isolation, it's, it's just beautiful. I hope it never becomes a populated area'. *Frank*, who was in his 50s and living on a small property in the Central West he had purchased, made comparisons with other landscapes:

> This is beautiful country, been to Brisbane, been to America, been to the Islands, haven't been to Europe or Asia … I've seen a fair bit of eastern Australia … there's a beauty in this country … there is a real beauty.

Some observations revealed an appreciation of the open spaces, such as from *Helen*, a company employee in her 30s, and on a large Gulf property, who said: 'I think it's just the space'. Others spoke about the sense of freedom it gave them. *Carol*, in her 40s on a large Gulf property she and her husband had purchased, remarked: 'There's a certain freedom I suppose'; *Matthew*, also in his 40s on a medium sized property in the Gulf, he had inherited, said: '… because of the freedom …'; and for *Sam*, in his 50s on a large company property in the Gulf, it was '… just the freedom I suppose … tranquillity'. For others, it was the lack of pollution. *Luke*, who was in his 30s and on a large company property in the Central West, said: 'you haven't got the noise, you haven't got the pollution'. *Hugh*, in his 40s, on a small property in the Central West he had inherited, enjoyed living in a natural environment, as shown by this reflection: '… you're living in probably the closest thing to a pristine environment'.

These remarks are important because they demonstrate beliefs that are consistent with the concept of the rural idyll. The graziers in this study are sensitive to and have an appreciation of the beauty of the landscape in which they live. They value the sense of freedom the open spaces provide and the tranquillity of the bush.

The other dimension of the rural idyll that emerged in this study was about the wholesomeness of life. This came from statements made about child rearing and supportive relationships, the majority of which were from younger women – which is not unanticipated. General comments about child rearing occurred during couple interviews. This is exemplified by a statement from *Carol*, from the Gulf, who said: 'A wonderful life for kids, growing up in the bush'. When women were interviewed on their own, the reasons why they valued raising their children in the bush emerged. A frequently reported reason was because it is safer than the city , found previously (Valentine 1997). *Joan*, from the Central West, holds a view not inconsistent with this, shown by her statement: 'It's a wonderful place to live and to bring up children, it's really safe'. *Helen*, a company employee on a large Gulf property, talked about the opportunity to 'mould and nurture … [and have] a very strong influence in everything that happens'. *Laura*, from the Gulf, in talking about her experiences and plans highlights what many country people see as the differences between child rearing in the country and the city:

> … as a high school student who … had been brought up out in the bush. I got down there to high school in Townsville and I realised that there is so much new stuff that I

> hadn't been exposed to … just the opportunities that kids in town get that we don't get out here, that you just don't know about like … sport, technology … that you get down there that you don't get up here, and so I thought this is great, but with all that came exposure to everything else that happens in town, the drugs, the things that happen in town that don't happen up here, generally speaking … that didn't concern me … I thought gee we don't get anything up there. So I thought I'm going to have kids, I'm definitely going to bring them up where they can, like I love music and I love sport and I wanted to do them but I couldn't up here because there is no such thing as singing, there is no such thing as guitar lessons … none of that … I thought I'm definitely going to have kids that go to school in town and they're going to music lessons, they're going to go to sport, they're going to do gymnastics, they're going to whatever … that is really important to me … having a good education in town. Then I left school and I worked in town and I realised that like, ok sure they get a lot of things in town … they get to do their sport, have access to technology and computers and internet and all of that but there is this side that I didn't like and it is the stuff kids in town don't have an appreciation of [that] the things that kids in the bush do … in general, in town the kids want for nothing, they go without nothing … they are so knowledgeable about things like that, I would never want a little kid to know about … and I just thought no that's not where I want to bring my kids up … I know that I don't want to bring my kids up in town …

This quote highlights the dimension of the rural idyll, where 'wholesome' country life is contrasted with the 'dangerous' city life. As a student, *Laura* felt keenly the lack of opportunity to participate in sport and cultural activities, but after experiencing life in the city as an adult, she concluded that these opportunities came with dangers such as drugs and experiences that provided children with knowledge beyond their years.

When men spoke of supportive communities, they tended to make general comments. The following opinion from *Chris* who had spent much of his life working on company properties in the Gulf, illustrates the value placed on community relationships:

> I've never lived in a better place as far as people supporting each other and looking after each other, making people welcome into their communities, it's a very non cliquey, just a very open, friendly sort of place.

Another dimension of the rural idyll was demonstrated by comments that showed that support was provided when it was needed. This is revealed in an observation by *Jill*, a private grazier in the Central West: '… when it gets down to the wire, the family farm will be the one that'll stand by you and make sure that you're fed and you're watered and you're clothed'. In a similar vein, *Helen*, a company employee in the Gulf, made the following comment:

> … bush women also tend to look out for other bush women a lot too, if you know someone is going to an area and you might tell them that these are the facilities that I know are available, so you can look these up and that sort of thing.

A further illustration of supportive relationships came from *Gary*, a private grazier from the Gulf, when he reminisced about his childhood. This also was another example of help being provided when it was needed. He said:

> … there is a great spirit of friendship and help and everything … in the wet season … the kids used to have to go back to school in the end of January. A lot of times the river'd be uncrossable … on the two-way radio … Dad'd ring a neighbour and say 'the kids have got to go back to school, I've got them booked on Tuesday' and the neighbour said, 'I'll meet you at the 16 Mile' … and we'd meet at the boundary, Dad'd … row us across in the boat and the neighbour would pick us up on the other side, take us down, put us up for the night, then next morning we'd get on a plane and away we'd go, but that is just the done thing … that is just part of living along side one another, that you always helped one another …

These statements are significant because they exemplify not only that supportive relationships exist, but also the nature of these relationships. The provision of help when it is needed suggests of a wholesome and virtuous life.

Predictably, younger women were more likely than women in other age groups or men to talk about supportive community relationships and parenting, but both men and women talked about the aesthetic appeal of the beauty of the landscape, and company managers were more likely than private graziers to talk about the rural idyll. Freedom appears to be associated with larger properties, as those on small properties did not talk about the space and freedom.

An appreciation of beauty is not an attribute one readily associates with graziers, but a range of people demonstrated through their comments that the landscape had aesthetic appeal for them. The perceived wholesomeness of the life is apparent in statements made about the bush being a great place to bring up children, and in comments about the support that individuals and families bestow on each other. The focal point of the rural idyll is about nostalgia for a sought-after life and the aesthetic appeal of the landscape. These results show that this wholesome sought-after life was part of everyday life for graziers in this study. These results confirm Holmes and Day's (1995) finding that the landscape had aesthetic appeal for many South Australian pastoralists, Barr's (2005, p. 21) report that farmers valued the 'amenity of open space and attractive landscapes' and Wear's (2000, p. 3) claim that one dimension of the Arcadian myth was the 'freedom, fresh air and sunshine'.

The landscape in which these graziers live has aesthetic appeal for them, and they value the supportive relationships they experience in their communities. They value the opportunities it provides for child rearing. These findings are consistent with the concept of the rural idyll which sanctions the use of this label to describe this element.

3. The lifestyle

The graziers in this study said they enjoyed the lifestyle they led. The attributes of this lifestyle were: the independence it offered; balancing their business with their lifestyle; having time to enjoy the lifestyle with others; achieving a desired material standard in the home and on the property; and providing their children with sought-after opportunities. Lifestyle is a term used in many contexts including in relation to the farming way of life (Bartlett 2006; Gray & Lawrence 2001; Gray & Phillips 2001; Higgins & Lockie 2001; Lees 1997a). Although the literature is replete with the idea of farming as a lifestyle, by comparison there has been limited empirical analysis of this facet of farming. However, there is research that is relevant to the concept which is now outlined.

Fairweather and Keating (1994) found that although farmers had both social and economic goals, they usually preferences one. The economic dimension typically refers to the goal of farming being to increase production, profit maximisation or a focus on commercial outcomes. A stream of work initiated by Gasson (1973) found that UK farmers had a predominantly intrinsic orientation to work, which is the 'enjoyment of work tasks, preference for a healthy farming life, purposeful activity, value in hard work, independence, and freedom from supervision' (Kerridge 1978, p. 63). As reported in Chapter 2, the results of the Australian studies based on Gasson's (1973) work reached similar conclusions. Consistent with these findings Mooney (1988) found that Wisconsin farmers valued being their own boss, Webb, Cary and Geldens (2002) found that independence was one of the six dimensions of the pastoral identity for New South Wales pastoralists and Anderson (2004) established that dairy farming was valued as a lifestyle because of the independence and self-sufficiency it offered.

The concepts grouped under the lifestyle element in this study, which reflect components of the farming lifestyle in the literature, are now discussed. The concepts of independence and freedom from supervision emerged in this study. The independence that is part of being your own boss is illustrated in a statement by *Joan*, who was in her 30s and on a medium-sized

property in the Central West. She said: '… you can work as hard or as little as you want to on any given day … it's your decision'. When I asked *Lawrence* and *Carol*, who were private graziers in their 40s in the Gulf, what it was about the lifestyle they liked, they also enjoyed the independence. They responded to my question with the following interchange:

> *Carol*: We like living in the country.
> *Lawrence*: I like the variability.
> *Carol*: We like making our own decisions.

These statements reveal that independence in decision-making is a valued attribute of the lifestyle. Balancing the social and economic dimensions of life, is another attribute of the lifestyle found in the literature and also reported in this study. This was mentioned in two different ways. First, comments were made about whether running a grazing operation could be both a lifestyle and a business. Second, the concept of the material circumstances required for the lifestyle were mentioned.

Several participants made a comparison between having money or having a lifestyle. The following opinion from *Graham*, a company manager, from the Gulf, illustrates this. He said: 'Most people live in the bush because of the lifestyle. They don't live there because it makes them a lot of money …' In contrast, some participants indicated that they had both a business and a lifestyle. *Carol*, a private grazier from the Gulf, said: '… certainly, we run it as a business, but … we want the lifestyle as well'. *Bob*, also a private grazier from the Gulf, described how running the operation as a business gave him and his wife the lifestyle they desired:

> … if we can be professional in running our business and in some cases you have to be fairly … ruthless right, but at the end of the week we've got a whole heap of feed in this area here, we've got horses, so we can be recreational with our horses, we can go to the camp draft … the rodeo, we've got a river down there, we can go fishing. People come up from the cities and they enjoy this, we enjoy the company of those people, we can sit out here, out the front and have a beer. There's a whole host of things just in one environment alone that people in cities don't get.

These comments demonstrate that, for some graziers at least, although their goal is to balance the business and the lifestyle, it is the business that supports the lifestyle. Further, they show that, at least in the graziers' opinion, they have achieved both aspects.

A part of the pleasure of the lifestyle that is implicit in the previous quote is having the time to enjoy the lifestyle and share it with others. This is made explicit by *Jill*, a private grazier from the Central West, with the following assertion:

> … we've got a little bit of time, so we want to make it enjoyable … just our way of life and I guess if we were in the city you'd have to be rushing off to something or you'd come and go and while you've got time to stay and enjoy the sunset or whatever … I think it's nice to be able to do it in a relaxed way …

The second perspective on balancing the business and the lifestyle refers to the material circumstances of the lifestyle. This was described as being comfortable, which meant that their material circumstances were consistent with what they desired. This is exemplified in the following description by *Luke*, a company manager on a large Gulf property:

> … we're obviously on a wage, so … it's something that we've got to … be happy with ... if we're able to have a lifestyle that's comfortable for us and provides … a comfortable house and everything like that. A really good area to bring up kids, which is important, and if we're able to hopefully give our children the same opportunities that we had …

As well as describing the material circumstances, this reflection on lifestyle highlights the necessity of providing their children with opportunities equivalent to those that he and his wife experienced. Comfortable material circumstances for some graziers extended beyond the family home. This involved the capacity to develop and maintain the property. Both the home and property aspects are represented in the following view expressed by *Kevin*, a private grazier from the Gulf:

> … a big brick home and nice big sheds and nice yards, nice lawns and trees. We had thirty odd dams and they were all fenced and all pumping, and all troughed and little paddocks set up everywhere for ease of working it ... we really had things sort of set up comfortable to do things, for sort of quality of life …

The material circumstances here included improvements that promoted a well-organised and efficient operation. A couple from the Central West included all of these aspects when they described what lifestyle meant for them:

> *David*: The property's got to be big enough in my opinion to make plenty of money ... enough money to be able to maintain all the improvements … and educate the kids …
>
> *Jane*: And be able to put something away for superannuation too.
>
> *David*: It's no good living like a peasant.

Balancing the social and economic aspects of farming is an attribute of the lifestyle in this

study. A further nuance to the lifestyle element was provided by graziers who said that, while being a grazier was considered a lifestyle, business skills were now needed for this to continue – which is a reference to the economic dimension. *Sharon*, a private grazier from the Gulf, took this a step further when she described the lifestyle she had experienced in the past with the following words:

> There is quite a good living in grazing and there is quite a nice lifestyle. I mean, you can see as you drive around, all the tennis courts; people used to have tennis weekends and things like that.

Consistent with this, she also remarked that running a grazing enterprise was more difficult now, and that often off-farm work was needed to meet expenses.

Comments coded as lifestyle were pervasive. They were made by all age groups, both genders, by those in both study locations but more so by those in the Gulf, and by both private graziers and company managers. The lifestyle that grazing offered this sample was one they enjoyed. Independence was valued and balancing the business with the lifestyle was important. It appeared as though the role of the business was to support the lifestyle. Achievement of the lifestyle required meeting a desired standard of material circumstances in the home and on the property. Part of the lifestyle was having the time to enjoy the lifestyle and share it with others. Importantly, it also required the capacity to provide children with valued opportunities. Implicit here was that adequate finances were required, either through employment or successful management of the enterprise, but finances were not the focus. Lifestyle remained a somewhat nebulous concept, but these results provide evidence that it is a component of the grazing way of life, and it is one that the participants value.

4. The hardships

Despite the appeal of the way of life for participants, they did talk about the hardships. The majority of these are personal and inherent: the hard life, the isolation and family pressures. This is one of the few occasions where there was a significant difference between the study locations. Participants in the Central West were more likely than those in the Gulf to mention hardships, as were women.

References are frequently made about the hardships of farming. This is typically in the context of structural change, but also in relation to drought (Alston & Kent 2004; Gray & Lawrence 2001; Lloyd & Malcolm 1997; Stehlik, Gray & Lawrence 1999; Tonts 2005;

Wright & Kaine 1997). Other research acknowledged that the nature of farming, because of the reliance on seasons and climate, did create hardships such as family pressures (Haslam McKenzie 2000), and there are some inherent hardships such as isolation (Alston 1997; Haslam McKenzie 2000; Lawrence & Gray 2000).

The hard life included the long hours that some kept, but also the idea that farming was inherently tough. The challenge was to survive the hard times. The long hours were referred to by *Richard*'s comment. He was a private grazier from the Central West, who said: 'It's hard work. Seven days a week and we start early and we finish late'. *Glenn* an older company manager from the Central West, said tongue-in-cheek: '… the lifestyle's great, if you can handle 12 hour days'. *Laura*, a young woman from the Gulf, pointed out that farming is inherently tough:

> … it's true that it's harder to make a living out here now … but like it's always been harder, that's what rural life is, it's difficult, it's tough, that's why people in the bush are tough because they have to be, that's the way that they make their living … there's nothing soft about it.

Drought contributed to the life being hard. During the 1990s drought, when her husband worked off-farm to earn the family income, *Tanya* ran their properties. She said '… there's a lot of hard work trying to keep things going'. The hardship of drought was also mentioned by *Shane,* from the Gulf:

> … when you look around, the fair dinkum ones just put their head down and just work a bit harder, that seems to be what happens. I seen it all through them drought years. Pretty much the same people are still on them same properties. Simply because they just stuck it out.

Christine, an older woman from the Central West, talked about diversification as a way to manage through what she considered to be the inevitable hard times:

> … if you can diversify your skills and have the opportunity to earn off-farm income to help put food on the table during those times which are absolutely unavoidable on the land … poor seasons or really low prices or plain bad luck …

A salient point for this thesis that these quotes demonstrate is that the climate and the economic circumstances contribute to the life being a hard one. This point is discussed further in Chapter 5.

Isolation is already a well-documented aspect of rural life. Predictably, isolation was named as a hardship in these comparatively remote locations, and perhaps unsurprisingly it was

women rather than men who talked about isolation. How distance becomes isolating was illustrated by *Joan*'s recollection of her isolation as a young mother:

> I think that is the time when I felt most isolated with littlies, you know; nobody to kind of show them off to, or to talk about whether it is normal for them to do this or that. I mean, I've got that now through school, you can chat to other people, but when they're tiny, you really do feel a bit stuck. That's the time when I felt most geographically isolated.

This account highlights the personal costs that limited social opportunities can cause. *Cathy*, from the Gulf, whose children had grown up, also experienced geographic isolation but in a different way, which she reported with the following comment:

> … the closeness to family and friends that I miss now … and my mum's getting older … being able to see her and meet her needs … or if there's a function within the family, I'd like to be able to go to it, or if there's something at the theatre, like *Les Mis* [*Les Miserables*] is coming and I'd like to go to it …

The limited contact with friends and particularly family, was difficult for *Cathy.* The limits to social life at the everyday level were also raised. This was illustrated by *Beth* from the Gulf when she said: '… you have to put up with the isolation and can't just go and socialise Friday night … we can't, we're too far out'. However, like *Shane*, also from the Gulf, she valued being geographically isolated because it acted as a deterrent to casual visitors.

Another dimension of isolation was the loss of particular social skills, and losing the desire to have social contact beyond the property boundary. *Margaret*, a young company employee from the Central West, called this becoming 'bush happy'. When I asked her to describe it, this is what she said:

> … I've had a lot of friends and it's the same with myself … when they first came to the bush they were sort of … as large as life … and I know after a year or so they were lacking confidence, and I think that's because of the lack of interaction with other people … and I think you lose perspective a little bit … I think the more isolated you are the more bush happy you get … you get to the stage where you probably don't want to go anywhere, because it's too much like hard work? You have to well, just to have to talk to other people or new people or … I get quite nervous to go to social things … and it's from living out here for too long … social interaction is a skill … you don't realise it when you do it all the time but it is definitely … a skill, and if you don't do it, you do lose it a bit. You've got to sort of kick yourself to get back into it.

The above description of 'bush happy' highlights that, although *Margaret* saw the limits of it, she also recognised that it was not unpleasant. The idea of being 'bush happy' resonates with

Shane and *Beth*, who appreciated how much distance contributed to them minimising their level of social contact. Although isolation is hardship for most it is an asset for some.

An impact of structural change is a reduced rural population. Graziers noted the changes that had occurred for them. They talked about skeleton staff and absentee landlords, their friends leaving and schools closing – all of which had a negative social impact. One observation gave a rich description of these impacts. *Patricia,* a private grazier on a Central West property gave this account:

> I can cite a very large property that used to have four or five full time jackaroos, and now … the son's home, they virtually have mother, father, son and the odd people coming in … so that's the change, it's been enormous. Absolutely enormous! … and community is suffering because there's no longer those community get togethers any longer. They're flat out having a tennis get-together like we used to, five years, plus ago. You know there used to be regular things happening … Friday night in [local town] there used to be something on. You'd have 30 people plus, you know, just the little community, all rolling in there for a meal and talk! … They come together in dribs and drabs now ... but infrequent …

This quote is salient because it mentions the impacts of structural change on individual properties and the cumulative effect this has had on the local community. The inability of graziers to employ full-time staff because of the cost-price squeeze has resulted in fewer people on each property. Property amalgamations have contributed to the population decrease. This has had a significant flow-on effect on the community, to the point in this sample, where community gatherings have almost ceased.

Family pressures, mentioned in the literature as a hardship of farming, also emerged in this study. They tended to be mentioned more by older women and those on small properties. A well-known family pressure is succession, and a number of participants mentioned it. *Bob*, an older private grazier from the Gulf, talked about the pressures inherent in family farming:

> I see 80 year-old fathers … with 55 year-old sons who've got grown families who can't even sign the cheque. That is just rife, that is absolutely rife. So you hear about them, you know there's funding available … get funded to do a succession [plan], but there's not too many people take it up, they're frightened of it … arguments do occur in families. How do families break up? Bust, wives and sons busting up, it's rife.

A lack of succession planning can create enormous and continuing family pressures. The above scenario is not rare in farming families. Often no formal discussions take place within

families (Gamble, Blunden & Ramsay 2003). *Carmen*, a private grazier on a small property in the Central West provided another insight into family pressures:

> … your family's been on this place for 70 odd years, it's like admitting defeat, if we go out the back door, we have done the wrong thing … we are third generation … they have that family tie to a place and you don't think with your head, you think with your heart, because you've been here, and we would be in the same predicament. There's no way in the world we would sell this place while Ma's still alive, because it's her place!

Her point is that great hardship would be endured rather than admitting defeat by leaving. *Carmen* believed that leaving would be perceived by the family in this way, which is consistent with a study conducted on farmers who were reluctantly considering exiting due to financial difficulties (Webb, Cary & Geldens 2002).

The quotes about family pressures are salient for two reasons. First, they offer a reason why some graziers may stay, but not out of choice. Second, they reveal a tension where despite the focus on a management approach there are extremely strong family ties to land that result in people thinking with 'their heart'.

Hardships are a fundamental part of the grazing way of life. This is an ongoing element of the grazing way of life, rather than something that occurs periodically, such as only during drought or difficult economic periods. Even in good seasons and when commodity prices are high, farming continues to be a hard life in some respects – for example, the isolation caused by geographical distance from social contact or because of the now more sparsely populated areas. The workload that now confronts graziers – particularly the smaller family farms – because of property amalgamation, or because finances no longer provide for staffing, can also create hardship.

The voices of the graziers here provide an unambiguous representation of the hardships that are part of their everyday life. This is a sharp contrast to the notion of living a sought-after life as with the rural idyll and the idea of the business supporting a lifestyle. It is this contrast that is a contribution that the hardship element makes to the set – it provides some balance to the other elements, which are all positive. One criticism of the rural idyll is that it serves to mystify and mask actual social and economic conditions (Barrell & Bull 1974). This has not occurred in this study.

5. Choosing to go there, wanting to stay, and passion

This study has found that some participants made an active choice to be on the land and others have made an active choice to stay on the land. This is contrary to the other work. An example is Shucksmith's (1993) argument that farmers are socialised from a young age, through repeated experiences and interactions with a dominant mode of thought. This process predisposes them to act in a particular way but also constrains their freedom to act. However, this argument does not address how and why many sons choose not to stay on the land. Children choosing not to stay on the farm is one factor contributing to the ageing of the farmer population (Barr, Karunaratne & Wilkinson 2005). Consistent with the idea of socialisation is a notion from rural ideology that the intergenerational transfer of land which occurs through the male line serves to preserve the ideals enshrined in family farming. Traditionally the transfer has occurred through the son returning home after completing school to serve a long apprenticeship prior to being handed control of the family farm (Alston 1997). Implicit here is the idea that, if the son makes a choice at all, it is a passive choice. There is evidence in this study that some made a passive choice to stay. To illustrate this point, one participant said he stayed because the land had been in the family for three previous generations and he was the only male in the fourth generation. This implied that he felt or experienced pressure to return to the land after school, in order to carry on a family tradition.

Participants said that they chose this way of life and wanted to stay despite the disadvantages and hardships. Central West graziers were more likely than Gulf graziers to talk about choosing to go there, and these comments tended come from be the wives of younger private graziers, indicating that their husbands wanted to be there. Company managers were more likely than private graziers to talk about wanting to stay, and it was generally older men who talked about wanting to stay. *Joan*, a private grazier from the Central West, spoke about her husband:

> … when things are really hard and … when you see the stock struggle and you're struggling with the stress of it all, I still don't think my husband would want to be anywhere else, and I think that's the way a lot of the people out here are, especially the ones who've grown up here. They can't imagine being anywhere else, and you just take all those problems along with it, just like city people that put up with traffic and nosy neighbours; it's just what goes with the territory.

Joan muses that wanting to stay there despite the hardships is perhaps an attribute of people who grew up on the land. Among others, *Margaret*, a company employee in the Central West, chose to live in rural Australia. She indicated that being there was a choice made by herself and her husband:

> … I think it's going to get to the stage where we can't get people to come out to the bush, except for the ones like [us] … who just love it so much … you're just out here because you love it … I'm fortunate … I love the bush and I chose to be out here …

It is interesting to note that, of the two couples represented in these quotes, only one person grew up on the land. *Margaret* and her husband chose the rural lifestyle then met through their work. By contrast, *Luke*, a company manager from the Gulf, pointed out that even though he grew up on the land, it is his choice to be there now: 'It's not sort of following what Mum and Dad have done; it's what I've chosen to do'.

Several participants talked about wanting to stay. *Richard*, an older private grazier from the Central West, talked about his and his wife's decision to stay and the intrinsic rewards it had for him:

> … if you want to live … have a house overlooking the blue Pacific down at Surfers or Alexandra Headlands … if that's what you want … we've had the opportunity. We could have done that … we chose to stay here and stick with what we think we know we're dealing with. And it's been very rewarding to me and my family … and … I like doing this … and that's the only reason I've done it. It's just because I enjoy doing it … doing what you enjoy doing, that's the most important thing in life I reckon … I have no difficulty at all in suggesting to people that it's a wonderful life, being on the land.

In contrast to *Richard*'s very positive experience, *Christine*, an older private grazier from the Central West, reflected on the costs of staying:

> … we always felt it is our choice to stay here … but neither of us wanted to see our children lose opportunities because of our choice, you know, which involved terribly hard times and huge sacrifices … so we always determined that they would get the very best education … that is during the '70s where we'd gone through seven years of shocking droughts from '65 on; the collapse of the wool market in 1972, followed shortly after by a collapse of the cattle market and combined with personal circumstances at the time where we were buying out a partner as well.

This quote demonstrates that, despite the great hardships they experienced, they stayed. This was not a passive choice but an active one. The importance of providing opportunities for

their children through a good education, as *Christine* mentioned, is an issue that is repeated elsewhere in the study.

Some, such as *Roger* and *Sally*, company managers in their 30s on a large Gulf property, reported being happy to continue this work: 'Our aim is to stay with the company … that's all we sort of want to do at the moment, we're happy doing what we're doing. Others were very definite about staying, such as *Carol* from the Gulf, who said: 'I wouldn't live anywhere else', and *Andrew*, from the Central West, who said: 'I'm quite happy to be here, as long as I can be here'.

Some participants in this study stayed because they perceived they had no other choice. The greater evidence, though, is of active choices being made to live on the land and despite difficulties, people choosing to continue living on the land. This is contrary to other work that implies that men make passive choices about becoming farmers, following in their father's footsteps. This study has provided empirical evidence that active choices are made.

Passion for the life and passion for the bush were sentiments that emerged in this study. Some participants talked about the need to have a passion for the life in order to continue, which is similar to perseverance. Others talked about their passion for the bush and recounted their contributions. Women and private graziers were more likely than their counterparts to talk about passion.

Passion is a relatively unexplored dimension for farmers and graziers; however, Taylor (2002) reported that passion and commitment were considered critical attributes for the future success of graziers in the Australian rangelands. Webb, Cary and Geldens (2002) labelled 'perseverance' as one dimension of the pastoral identity, which resonates with having a passion for the life helping to continue during difficult times.

Frank, from the Central West, talked about the properties on the river that he had seen change hands during the 37 years he had lived on his land. He saw passion as something that helped people get through difficult times:

> [People have] gone broke or families of older people have given up and retired and the children have taken on different other jobs and haven't wanted it; the enthusiasm hasn't been there. Once if the original people sold and someone else bought it for the reasons of just making money and no passion of the land that they owned, when it got

> tough they said ‘bugger it we’ll sell it’ … you’ve got to have a passion for it. If you take it up just purely for business purposes you don’t even make any money.

Sharon, a Gulf grazier, had a passion for the bush. She had a long history of lobbying for the bush, reflected in the following comment:

> Well, I think we got a few changes, a few minor ones … I haven’t given up, and I never give up. But I’m just not as optimistic as I used to be. I was all fire and brimstone 25 years ago, careering around the corridors of Parliament with big ideas. But I soon got knocked off my perch. We all do. It’s sad … the committees I’ve sat on and the things I’ve done are legion … but we did get a few wins along the way.

This comment shows a long-term commitment to lobbying, and a view that, despite the hard work, there was some success.

Despite the differences between choosing to go there, choosing to stay and passion, the underlying connection is the sense that these people are drawn to the life. Although making an active choice to be a farmer is contrary to the prevailing sociological view, as discussed, this study demonstrates evidence that active choices are made and that, despite the hardships, people continue to make active choices to stay. It appears that having a passion for the life helps during the difficult times but it also drives people to lobby for change. On this basis, these combined concepts can be considered a legitimate element of the grazing way of life.

6. Challenges and satisfaction

Farming is recognised has having numerous challenges. These stem from the attributes of farming already discussed, such as being market and season dependent. Farming is also known to have intrinsic rewards such as the independence it offers, again discussed. The challenges in this thesis are conceived of by participants as positive, which contrasts with the sometimes ‘challenging’ nature of farming. The challenge is the test of their knowledge and skills. The satisfaction is the emotional return for succeeding and the visible output of their efforts. This is consistent with Gasson’s (1973) expressive value, ‘meeting a challenge’, which was consistently ranked highly in studies that used this list of goals and values (Gasson 1973; Holmes & Day 1995; Kerridge 1978).

The challenge of being a grazier through the test of knowledge and skills is illustrated in several ways. *Frank*, a private grazier in the Central West, said: ‘Out here it’s a challenge, you’ve really got to think’. *Matthew*, a private grazier from the Gulf, said: ‘It’s a challenge to get everything up and running and keep it running and at the end of the day, the buck stops

here …' *Lawrence*, a private grazier on a large Gulf property, said: 'Every year's different. Seasons are different … that's what tests you, that's what makes and breaks you'.

When participants spoke about their achievements and the satisfaction they received, it was clear that this was an important reward. *Frank* spoke from the heart about the small property he had purchased in the Central West:

> I've never had a quid in me life and I'm going to probably die handing on a multimillion dollar; it'd be worth more than one million anyway, to my family and if they get as much fun out of having it as I have putting it together, I'll be happy … my success in it is in creating it.

David, a private grazier from the Central West, also talked about the satisfaction he received from 'creating' his property:

> The beauty of living in the bush is you are creating something. I often say a beautiful property is like a masterpiece, it's like a Mona Lisa, it's just something magnificent, it's nearly a living thing a property. It's just something you get tremendous satisfaction from.

Both of these men spoke of an intangible an unquantifiable reward: creativity. *Bruce*, on the other hand, talked about the satisfaction he got from being a grazier: 'I don't have to be doing this. I do it because I like it. I get a great sense of achievement'. *Matthew* and his wife *Beth*, private graziers from the Gulf, expressed achievement and satisfaction by describing the visible outputs of their work:

> *Beth*: We can see that we've progressed, it's ten years we've been here …
>
> *Matthew*: Oh, I think you can see what you've done, like you look around here and know what you've done … and those cattle on the trucks this morning, we bred them ... they're going to pay you now … look around and see the property is working … living here … that's what I think it is and our kids … we've got it this far, if you's are going to take it over sort of thing, if we can pass it along …

The satisfaction that participants expressed about their chosen way of life is palpable. Their rewards were primarily non-economic as Gasson (1973) and others found. The challenges are intellectual and the satisfaction is from meeting the challenge and the visible outcomes.

7. Realising a dream

The idea of the grazing way of life being the realisation of a dream appears to be novel, though Cameron (2005, p. 3) does refer to the 'call of the land' – a phrase coined by Johnston (1982, p. 82) to describe why many young men who 'dreamed of a new life working their

own land' responded to the opportunity that the closer settlement schemes appeared to offer. Although realising a dream is not mentioned often in this study its importance as a driver cannot be overestimated. Typically it was men who talked about owning land as the realisation of a dream.

Some participants remarked about others owning land being a dream, such as *Hugh*, from the Central West:

> A lot of people come along in life with a big dream that they want to do things, it's just like the Australian dream of buying a house … it's like that dream, you know it's like that 'We want to own a property' … it's like that attitude, 'This is something I've wanted ever since I've been a kid. And I will do anything to get it … I don't care what it takes but I'll get it'.

Kevin, a private grazier from the Gulf, was aware of 'the dream' but cautioned against acting on it: '… as much as we would all dream of owning our own little piece, unless it is of economic size, you're really only putting a chain around your neck …' *Jim*, a company manager from the Central West, expressed similar reservations:

> … a lot of people buy a place, they're so desperate to go out on their own, which I think's great but they go into such a huge debt that they spend the rest of their days paying it off.

Lawrence, from the Gulf, talked about people he knew personally who dreamed of owning rural land:

> … on the edge of the industry … helicopter pilots, agents, that sort of thing. They live in town, but they're as close to the industry as you can get. They can't afford to have their own place. Alot of them would be back out here if they could … a lot of times, they're fellers that come back from the cities, they're plumbers or … or even doctors … they grew up on the land. They've always had a burning urge to come back! … they've done well, and they want to get back out on the land and do what their grandparents or whatever did.

In contrast to these comments about other people's dreams and the reservations expressed, one of the company managers disclosed that he was about to realise his dream. *Allen*'s comment is poignant:

> … it's been my dream ever since I started working cattle to have my own place and work them, because I don't think there's any more personal job satisfaction … than working your own cattle and … sort of standing back and saying, well, 'they're mine' … I've always been … employed by someone but … they're not my cattle, I get employed to look after them, which I do to the best of my ability but in the end they're still not mine, and we're sort of advancing next year hopefully to be able to do that.

After almost 20 years of managing properties for others, he had just purchased his own property. It meant uprooting his family and leaving the district, but as the comment showed, he was realising a lifelong dream. This was more powerful than any reservations expressed by others. The satisfaction *Allen* anticipates receiving from working his own cattle suggests that there may be a relationship between the 'satisfaction' element and realising a dream.

The language used in these comments – 'don't care what it takes', 'desperate to go out on their own' and 'burning urge to come back' – suggests that this is a deep-seated compulsion, and therefore a powerful driver. Study participants indicated that they knew people who had 'the dream', and one in this study spoke about realising it. Further work would need to be conducted to investigate this element more closely, but it is proposed here as an element.

Conclusion

This examination of the elements of the grazing way of life (see Table 7) suggests that this way of life was a powerful attraction. Graziers enjoyed the way of life they had chosen, and elected to stay despite the hardships. The work and way of life offered independence and challenge, and pleasure was taken from the satisfaction of meeting those challenges. The landscape had beauty for them and the distances and open spaces had appeal. The bush was considered an ideal place for raising a family and they valued the supportive relationships they experienced. They endeavoured to balance the business and the lifestyle, and take the time to share it with others. There was a passion for the bush and there was a belief that agriculture and family farming were inherently important to Australia. This way of life was known by some to be the realisation of a dream.

Few elements differentiated between the study locations or between private graziers and company managers. Those in the Central West were more likely than the Gulf graziers to talk about the hardships and choosing the way of life, whereas those in the Gulf were more likely to talk about the lifestyle. When private graziers and company managers were compared on these elements, private graziers were more likely to talk about agrarian fundamentalism and passion, whereas company managers were more likely to talk about the rural idyll and wanting to stay.

Table 7: The seven elements of the grazing way of life

1. Agrarian fundamentalism
2. The rural idyll
3. The lifestyle
4. The hardships
5. Choosing to go there, wanting to stay, and passion
6. Challenges and satisfaction
7. Realising a dream

The grazing way of life highlights the importance of the social component of farming for these graziers. These elements largely reflect what has already been found in literature associated with the social component of farming. However, finding that they represent a way of life with a strong attraction, at least for this sample, lays bare the potential power of the social component of farming.

This finding also provides insight into why there has been a lower than expected exit rate from farming over the last 30 years (Cockfield & Botterill 2006, p. 79). It raises concerns about what the future of some of these families may be because the current cost-price squeeze is predicted to continue (DAFF 2005). Chapter 6, which reports how graziers manage their enterprises gives some indication of how they may deal with this test. The next chapter details what the graziers perceive their challenges to be.

Chapter 5: The context and challenges for graziers

Introduction

The purpose of this chapter is to report how graziers described the context within which they operated, and the challenges these circumstances presented for them. This is the second of three themes that was revealed by the analysis. Unlike the previous chapter, which took a property-level view in describing the social component of farming, this chapter describes how graziers saw the broader context within which they operated their grazing enterprises.

Much of this context has been created by a complex, long-standing and evolving system of interactions between the geographical, business and social dimensions of life. Consequently the broad context within which graziers operate has already been documented (Gray & Lawrence 2001; Lees 1997b; Lockie & Bourke 2001; Pritchard & McManus 2000). What this thesis contributes is a specific context for these graziers in rural and remote locations in Queensland in the early twenty-first century, through the voices of the graziers themselves. Some of the challenges and their impacts that the graziers report – such as Aboriginal land rights, environmental protection, consultation processes and insecurity of tenure – have been documented elsewhere (Australian Farm Institute 2004; CIE 2000; Head 1994; Kelly 2001; Queensland Government 2001). The contribution of the context and challenges identified by graziers in this study, to graziers' perceptions of sustainable development is discussed in Chapter 7.

Context: Geographical, business and social

Geographical: Climate and distance

The climatic extremes that characterise these areas and the impacts of the long distances in these locations, were topics of some concern to study participants. Climate was mentioned, more by Central West than Gulf graziers, and typically it was in the context of drought, whereas when Gulf graziers mentioned climate, it was the wet season (when most rain falls) (Manchester Metropolitan University 2004). However, when the constraints of climate and distance were considered together, Gulf graziers were more likely than Central West graziers to raise it. The major impact of the long distances was the costs this imposed.

The pastoral industry is characterised by a 'harsh and variable climate, uncertain markets and variable prices' (Ash & Stafford Smith 2003, p. 113). Drought, one aspect of Australia's inherently variable climate (Lindesay 2003), was treated by many landholders, politicians and policy-makers (Botterill 2003) as an unusual event or natural disaster, but increasingly it is treated as an unpredictable but normal climate event (Botterill 2003; Stehlik, Gray & Lawrence 1999), including by the graziers in this study. The impacts of drought were 'frequently extensive and multifaceted … and can include financial, economic, environmental, social and political impacts' (O' Meagher 2003, p. 111). For farm families this includes high debt accumulation under extended drought conditions (Commonwealth of Australia 1995), increased poverty from a loss of income, loss of support networks and increased social isolation (Alston & Kent 2004; Stehlik, Gray & Lawrence 1999). At a national level the 2002-03 drought was estimated to have reduced the rate of economic growth by 1 percent (DAFF 2004, p. 1).

Drought was a greater concern for Central West graziers than those in the Gulf because the tropical climate of the Gulf dictates that there will always be some rainfall during the wet season. This is why some participants described the Gulf as 'safe country'. *Richard*, from the Central West, captured the uncertainty of drought and the strong presence it has with the following comment:

> Drought is on everybody's mind at the present moment. It really is a worry to a lot of people. It's a worry to me because it costs a lot of money just to keep feeding the stock. And we don't know when the drought is going to finish! … it might rain next August and it mightn't be till the following summer … we know we can't keep some of our stock alive till this Christmas [in three months], let alone the next one.

This quote identifies several points salient to this thesis. Drought is a part of everyday life. This was mentioned as one aspect of hardship in Chapter 4. Even though it is a normal event, it can be a very costly one for people who choose to keep their stock. Drought is characterised by uncertainty.

Like drought, there were negative impacts from the annual wet season. The flat landscape and the high volume of rain in a short period result in roads and river crossings becoming impassable, which prevents the trucking of goods and stock and causes the isolation of people on their properties for periods of weeks or months. In the Gulf, goods are transported almost exclusively by road due to limited rail services and the high cost of air freight, which makes

transport a key industry; however, this shuts down during the wet season. Most staff are laid off, and often families holiday away from the property during the wet season. The seasonal nature of work creates challenges for the transport industry, other support industries and recruitment on grazing properties.

Issues raised by study participants about distance related to the costs of travel, the time it involved and the constraints this imposed. The costs of travel typically referred to the cost of fuel, or how this cost added to the cost of transporting stock or the price of groceries. The costs and the time needed for travel reduced access to education and recreation.

The size of the wide open spaces in inland Australia means distances are more significant than in coastal areas. Even though people who live in rural Australia have become accustomed to this (Argent & Rolley 2000), distance does limit access to resources (Wilkinson 1986) because of the high costs of road transport over long distances (Landsberg 2000). The introduction of the live cattle export facility at Karumba (Gulf of Carpentaria) for export predominantly to Indonesia (Griffith 2004) benefited graziers by reducing the distance that cattle had to be transported. However, the marketing costs (freight, cost of containers, commission and other marketing charges) are high. These were estimated to be 8 percent of gross value for cattle for Australia (ABS 2006, p. 7), but were estimated by *Allen*, a company manager from the Gulf, to be '… 15 per cent … just to get it to market', which is almost double the government estimate for the whole of Australia.

This research was conducted in areas where distances are significant. The size of the properties and their distance from regional centres demonstrate this. In the Gulf location the size of the properties ranged from 10,000 to 500,000 hectares, with most being more than 100,000 hectares in size. In the Central West, the range is similar but with clusters at the 10,000 and 20,000 hectares size.[11] Few of the properties I visited in the Central West were more than a three-hour drive from Longreach, the regional centre for the Central West but in the Gulf often it was a five or six-hour drive to a regional centre such as Mt Isa.[12]

[11] To provide some comparison, the Australian Capital Territory is 240,000 hectares in size, smaller than more than half of the properties in the Gulf case study.
[12] Participants were not selected on the basis of their distance from a town, nor randomly, but through snowball and theoretical sampling. These distances are not presented as representative but to provide context as to what size and distance mean in this study.

Unsurprisingly, Gulf graziers were more likely than Central West graziers to comment on distance.

The following comments by *Beth* and *Matthew,* from the Gulf, were about freight costs:

> *Matthew*: It doesn't matter what you buy here, the freight, it's the biggest part, like if you get a semi load of lick or a semi load of hay or whatever …
>
> *Beth*: It takes the cream off the cake so to speak.

Hugh, from the Central West, commented on the price of groceries: '… the fruit and vegetables are 15-20 percent dearer than in the cities … [and] the quality's dreadful'. Often the produce has deteriorated because of the distance travelled and the time this has taken. *Carmen* talked about the constraints distance placed on children:

> … my daughter … her school's travelled to Burketown to play netball. I mean, that's a lot of mileage. And the same with my son, with his football. We used to have a Central West football, but it sort of folded as the towns have got smaller. So for the kids who really want to play football, they have to go to that area. So to me, that is a really big social impact on our children. If they want to be involved in things, they do have to travel lots of miles … as a consequence, a lot of families who can't afford it, those kids miss out. And that does happen. So kids to me are very much disadvantaged … if there is not the financial … to go because it's not cheap, like every weekend they go it's $10 for the bus and then so much for food, because they're usually away the whole day. And it also becomes very tiresome. I know my son by the end of it, he was really tired …

The first two quotes described the economic costs of distance. The percentage of income that was lost as a marketing cost, and the percentage added to the cost of purchases because of freight charges are elements that contribute to the challenge of continued economic viability. However, *Carmen*'s account highlights the social impacts of structural change. The reduced rural population has resulted in fewer sporting teams. Consequently these teams travel greater distances in order to be part of the competition. These greater distances result in higher participation costs. Therefore, children whose parents are unable to meet the higher costs are excluded. This is one of the facets of rural disadvantage.

In summary, climatic extremes and the long distances were identified as constraints. The unreliable rainfall in the Central West which contrasts with a predictable wet season in the Gulf, brings both economic and social costs. The greatest issue created by distance was the cost imposed by freight charges, but the reduced access to social activities was also a cost. The geographical context created both economic and social constraints.

Business context: Market and season dependent

Commodity prices, when paired with seasons, were seen by participants to be of fundamental importance to their future viability. The geographical impact of climatic extremes was reported in the last section, now an account of the economic impact of being season-dependent is provided. These graziers, particularly the private graziers (rather than company managers), considered themselves to be dependent on markets and seasons. As previously reported, drought was a greater concern for Central West graziers than for Gulf graziers because there was an annual wet season in the Gulf. By comparison commodity prices tended to be of greater concern for Gulf graziers than for those in the Central West. There are no indications as to why this is so.

Agricultural production in Australia is inherently risky because of these dependencies. There are production risks because of climate dependence, and price risks because of dependence on international commodity markets (Arnott et al. 2001; Ash & Stafford Smith 2003; Tanewski, Romano & Smyrnois 2000; Wright & Kaine 1997). Smart (2003, pp. 83, 107) claims that the market process is an outcome of 'unintended consequence[s] of the complex articulation of a multiplicity of individual decisions, unanticipated conditions and unforeseeable circumstances', and 'frequently exhibit[s] disorder and produce[s] disorganization'. More than three-quarters of Australia's beef is exported (Meat and Livestock Australia 2005, p. 73), with Karumba in the Gulf of Carpentaria an outlet for the live export trade and a number of Gulf graziers selling through this port. Reliance on world markets, combined at times with high interest rates, the changing value of the Australian dollar, disease outbreaks overseas and rising land prices can result in unpredictable fluctuations in income from year to year (Pritchard 2000) – a situation that is predicted to continue (Commonwealth of Australia 1995).

A number of participants said that poor seasons combined with low commodity prices were a decisive factor in determining their livelihood and futures. This is consistent with other findings. Webb, Cary and Geldens (2002) reported that climate and market pressures were given by New South Wales pastoralists as reasons for being in financial difficulty, and Dames and Moore (1999) found that commodity prices were one of the key issues identified by Gascoyne-Murchison pastoralists in Western Australia. Typical of the comments that identified these factors is one from *Richard,* an older private grazier from the Central West:

'Droughts and commodity prices, they are the real issues in this country'; and *Murray*, a Gulf grazier: '… sustainability is determined primarily by the climate and the seasons'.

Graziers described markets as cyclic. The uncertainty of international markets was perceived to result from market vulnerability to a range of external influences. These included industrial action, disease outbreaks and religious unrest. The awareness of the instability of international markets, and how they can be impacted is illustrated in the following observation by *Frank*, a private grazier from the Central West:

> … you've got to know everything with markets, this longshoremen's strike over in America is having an effect on our markets locally. There's a wharfie strike on the west coast and there's so many thousand hundred tonne that can't get in there; that's our beef, our citrus and it's on the sea but they can't get it off the boats, so that's having an effect on our markets here.

A combination of poor seasons and low commodity prices were identified by graziers in this study as decisive determinants of their future. Therefore, how they manage the financial impact of this set of circumstances is of interest in this thesis because it is pivotal to the concept of sustainable development. Although the question is taken up later, *Paul*, a company manager in his 50s from the Gulf, made a statement that provides some insights:

> The biggest economic issue, of course, is our cattle price. Looking at future generations or anyone else, the more pressure you come under as far as price of cattle, the more pressure is placed on everything. If your returns are not great there's more pressure to, what would you say, forsake some of the environmental concerns for extra dollars.

This remark suggests that over-grazing may occur for financial reasons, and more broadly that the appropriate environmental management may be forfeited for economic viability. The topic of over-grazing is taken up in Chapter 6 and how graziers interpret sustainable development is discussed in Chapter 7. Two memos labelled 'strong economic focus' and 'short term focus' provided an early indication of key influences on grazier's. Repeatedly poor seasons and low commodity prices were mentioned in the context of the negative economic implications. I questioned whether the constantly changing seasons and commodity prices forced graziers' to take a short term perspective over

Dependence on unreliable seasons and volatile markets creates a challenging business environment. A downturn in commodity prices, combined with a drought, has the capacity to force graziers out of business and this does occur (Webb, Cary & Geldens 2002). Many of

those who made comments about being market and season-dependent were older males who were private graziers from the Central West. The ability of company managers to move stock to other properties during dry periods, combined with receiving a wage which provides for their needs independently of seasons and commodity prices, may account for the lower level of comment by company managers. Such an insubstantial hold on the future success of the enterprise has implications for how it is managed in the short term, which is an issue central to this thesis and discussed in Chapter 7.

Social context: Infrastructure and services

Graziers in this study identified that the provision of sub-standard infrastructure and low service access had economic and social impacts. The infrastructure elements of greatest concern for study participants were roads, telecommunications and electrical power. Although a range of services was mentioned, study participants who lived in more remote areas identified enduring issues related to educating children. A low level of access to health care and a loss of extension services were the other service issues identified.

These are not new issues for the bush. The impacts of structural change and globalisation on Australian rural communities are well documented (Alston 2004; Gray & Lawrence 2001; Lockie & Bourke 2001; Pritchard & McManus 2000; Tonts 2005). The complex social and economic changes resulted in reductions of basic services such as health and education, and infrastructure being privatised. This is turn contributed to the rationalisation of commercial services such as banks. This process has been ongoing for several decades. The provision and maintenance of infrastructure and the provision of services is hampered by the size of rural Queensland. The cost of providing infrastructure such as roads, telecommunications and electrical power is high because of the long distances. There is acknowledgement, however, of a lack of investment in rural infrastructure and its decline (Black et al. 2000; Commonwealth of Australia 2000).

Infrastructure

Roads were very important to these graziers. They played a fundamental role in running a grazing operation because of their dependence on trafficable roads to make their living. Poorly maintained roads reduce the level of access and the length of time per year that access is possible (in the Gulf), which impacts negatively on income. Trafficable roads are also required for face-to-face contact with other people. Not only was there a very high level of

comment about roads, this was the only issue that participants reported lobbying government about.

An important point made by several was that roads were one of the most important issues in the bush. The fundamental service that roads provide is illustrated by a remark from *Allen*, a company manager in his 50s from the Gulf:

> Roads, they bring the people, they bring everything. Even though we get a mail plane once a week, that only delivers our mailbag and a bit of freight. Everything else to be provided to the station has to come by road, and everything you turn off the station has to go out by road.

With no rail service in the Gulf and the high costs of air freight, roads were a lifeline. A rail line from Longreach to the coast meant that Central West residents were somewhat less dependent on roads.

The graziers claim that, although roads have been improved, they are inadequately maintained. A poorly maintained road can create significant costs. This is indicated by a situation that *Paul*, a company manager in his 50s from the Gulf described:

> We can't even get a decent road down here. I've lost nearly a hundred head of cattle on 14 decks of road trains rolling over in the last 12 months … yeah, no money to fix the road. It's the road not the prime mover, not the drivers … the drop off on the side [of the road] is like that [indicates 70 percent angle] and they got to get just in the wrong spot and the back trailer starts to run off and the whole lot just falls over. We're losing from deaths in cattle, drivers; trucking companies are losing money from damage to their vehicles and down time; and the insurance companies are losing money.

Paul's remark demonstrates the costs to multiple sectors of poorly maintained roads – pastoral companies, truck drivers, trucking companies and insurance companies. In addition to the financial costs, the animal welfare issues and risk of injury to drivers are shown in this quote.

The importance placed on roads was such that these graziers lobbied for improvements. *Paul* and his neighbours were lobbying government for repairs on the road mentioned above. When *Allen* and his neighbours, in a different area of the Gulf, threatened not to pay the more than $100,000 in rates owing to local government until their road was repaired, this brought action.

Although the graziers indicated that telecommunications was a significant issue for the bush, it did not attract the level of comment that roads did. They acknowledged there had been improvements in telecommunications, but claimed the equipment and infrastructure was still behind that of the city. This concurs with government findings (Black et al. 2000; Commonwealth of Australia 2000). This circumstance and the associated costs of advanced telecommunications affected uptake for participants, which is consistent with the finding that inadequate technical capability of telecommunication infrastructure (for example slow internet connection) and the cost of equipment and access were deterrents to computer use (Bellamy et al. 2002; Bryant 1999a; Grace, Lundin & Daws 1996).

A couple in the Gulf commented on the impact of older equipment on their business:

> *Matthew*: … our accountant he wants everything on email now because he's on email. Our fax doesn't even correspond with his fax anymore because he's that far ahead of us with communication.
>
> *Beth*: Our carrier here is too slow … so when I fax him, this here shuts theirs down so … I try and email it and sometimes they get through, sometimes they time out … they forget that the bush is ten years behind.

This is noteworthy because in Chapter 6 it is stated that a business strategy was to increase the efficiency of their business operation in order to achieve economic viability. The point of this interchange is that old equipment hampers their efficiency.

Most of the graziers in the study accessed rural power from the national grid system, but for the few who could not, self-provision was a large financial cost and also had non-financial costs. Those without access to the national grid system were in the north-west of the Gulf location and in some parts of the Central West location. There were no plans to extend the national grid system. Comments about electrical power referred mainly to the lack of access to the national grid and the costs of the alternatives. The most common approach to the self-provision of electrical power was diesel-generated power, estimated by a Gulf resident to be in excess of $40,000 per year, which is consistent with government estimates (Commonwealth of Australia 2000, p. 229). This is a significant cost. To reduce the cost, power is generated for part of each day (partial power), but these power fluctuations reduce the life of white goods and fresh fruit and vegetables, raise health issues about the storage of medicines and limit access to computers. An example of the issues this raised for education

comes from *Stephanie*, a private grazier on a large Gulf property who was a home tutor. She said her daughter 'uses the computer … probably … at least once a day and more'.

A recent alternative – a solar, battery and diesel generator system known as the Remote Area Power System (RAPS) – offers 24 hours-a-day power and lower running costs, but is expensive to purchase and does not support items such air-conditioners. *Russell,* a company manager on a large Central West property, commented on RAPS:

> … it's fairly inviting at the moment because of the … 50 percent subsidy … before the subsidy, it'd cost you in the order of $150,000, $200,000, and it wouldn't satisfy all our power needs.

What these quotes show is that although study participants not on the national power grid were few in number, the costs of providing and maintaining their own supply of electricity was high. These high costs have the capacity to impact on their economic viability.

Collectively, almost three-quarters of the study participants made some remark about infrastructure, which indicates a breadth of concern. In addition the comments were made by people in all age groups and of both genders, but were more likely to be made by Gulf graziers than their Central West counterparts. Company managers were more likely than private graziers to raise concerns about telecommunications. The impacts of structural change as previously stated, have been thoroughly chronicled. This study reinforces that these impacts continue.

Education, health and extension services

There was much commentary on the challenges of educating children. I wrote a memo during data collection about education being a thread throughout many of the interviews. Education was considered important because a formal education was believed to provide children with opportunities that would enhance their future. The low availability of health services, the disadvantages of visiting services and a lack of continuity of health care were also concerns. Unsurprisingly, those most likely to comment on these areas were women. Remarks about extension services were mainly about the loss of extension services, or the lack of them.

The reduction in services in rural Australia has been well documented (Cocklin & Alston 2003; Dale & Bellamy 1998; Gerritsen 2000; Haslam McKenzie 2000; Tonts 2000). This is reiterated in this study. Education, like distance, is an enduring issue for rural Queenslanders

(Alston & Kent 2006; Bourke 2001a; Haslam McKenzie 2000). The following comment from *Sharon* identified the complexities involved in education for graziers in the case study area:

> The education of children is a major concern to most people on the land. It is very sad for them to have to send their children away to school; often very difficult for them to teach their children. It's extremely difficult to get governesses or teachers that will stay and will do the job. So I'd say the education of the children is one of the major reasons why many families have left the land. Because they can see that higher education is the way that people achieve, or they perceive that's how it is. They want their kids to move on and not have to battle like they have. So they're encouraging them on to secondary education. Some of them have opted to move out and do that.

This identifies many of the issues faced by rural people such as those in this study and how highly they value the education of their children. The distance from education facilities means that many children are taught at home or sent to boarding at a young age. If they are taught at home, one alternative is a governess; however, these young women rarely have formal training that will equip them to teach, and they can and they do resign abruptly. One study participant reported having four governesses within a six-month period. At times, women choose to teach their own children (home tutoring) using the School of the Air, because of these recruitment and retention issues and because of the loss of privacy experienced by having a stranger living in the family home. However, for mothers taking on the role of home tutor, it creates a significant additional workload.

The boarding school option is known to be very costly (Bourke 2001a). *Mark*, a company manager from the Gulf, said it 'can cost around $13,000 a year and you get about $7,000 of that back but then there are a lot of extras'. One company couple said they would stay with their current employer until their children completed secondary school because of the generous assistance that was provided and their inability to pay the fees without this assistance. For some, such as *Glenn*, a company manager, a boarding school education was considered to provide the best education: '… you've got very little option if you want to educate them properly'.

The benefits of a good education were highly valued by this sample, and are consistent with previous findings (Alston & Kent 2004; Haslam McKenzie 2000; Stehlik, Gray & Lawrence 1999). Rural families are known to make sacrifices in order to educate their children properly (Alston & Kent 2004; Holmes 1986). Due to the cost-price squeeze, there were families in this study who struggled to provide for the family's needs. Consequently, they were aware

that handing on the farm to one of the children give them a liability rather than an asset. As a result of this, there was much emphasis on the importance of providing their children with a good education, which usually meant a tertiary education. Some had actively discouraged their children from returning to the land and others had insisted that their children acquire a trade or some other qualification before returning to the land.
Educating children is a complex and enduring issue for some rural Queenslanders. It presents as a challenging problem, and has implications for who tomorrow's graziers may be. The constraints stem primarily from the geographical location, so this will continue. The boarding school option has emotional and financial costs; home tutoring is demanding of time and energy. Employing a governess to tutor has privacy and financial costs and may not be balanced by the tutor's performance or the effort required in recruiting and retaining them.

The level of health care available to study participants is not comparable to that available in metropolitan areas. Although they did not perceive it to be a significant problem, they did note disadvantages. General medical services were available in small towns in the Central West whereas residents in the Gulf relied on scheduled fly-in services. Although they were grateful to have any service, *Graham*, from the Gulf, said in jest, '… if you're not sick on *that* day, well, that's tough'. Some specialist services visited, but most required travel to regional centres or Brisbane. *Phillip,* from the Gulf, had to go to Mt Isa or Brisbane for specialist services and this had impacted negatively on his ability to conduct his business. *Stephanie*, from the Gulf, reported that a relative was expected to relocate to the regional centre of Mt Isa because the specialist health care she now required was not available locally. Some specialist services visited, but not frequently. The rotational system where 'foreign doctors' visited has created a lack of continuity of care. For example, if a person has continuing health problems he or she would be seeing a series of different doctors rather than the same practitioner.

Surprisingly, participants appeared to be relatively accepting of the level of health care they could access. They may have become accustomed to this level of service because of the significant reductions in health services commenced decades previously.

By contrast, these graziers were discontented with the level of access to extension services. Some mentioned the loss of extension services, whereas other noted the lack of them. It was older participants, and those on small properties who were more likely than others to make these observations. Company managers did not mention extension services. Some of the older

graziers had experience of the one-to-one production-focused extension services in the 1960s (Barr & Cary 1992, p. 7), followed by the move to group and a user-pays approach (Coutts 1997). *John*, a private grazier from the Gulf, is one of these. He commented on the changes he had observed since the 1970s:

> … the DPI, one time they were very good. They'd come and do tours around the place and see you out of your problems. Now you can't even get them to come and dip the cattle unless you pay for it … if you wanted to find anything out you know, you could ask the man and he would find the information for you and all the rest of it, but now you hardly ever see 'em.

In describing the level of research and extension currently undertaken in the Gulf, *Nick*, a private grazier, spoke of the Gulf as being 'extension free'.

Without doubt, there were study participants who believed that their roads, telecommunications and, for some, electrical power supply were sub-standard. Roads were a significant issue for participants. They were dependent on them to conduct their business but also to socialise. There was evidence of poorly maintained roads having a negative economic impact. Telecommunications were considered sub-standard because the equipment and infrastructure were behind those in the city, and thus interfered with participants' ability to conduct their business. For study participants not on the national power grid, the provision of electrical power was expensive. To manage the short-term costs, partial power was used, but this has longer term social and economic costs. One of these is reduced computer access for children being home-tutored.

Central West graziers and company managers were more likely than their counterparts to comment on individual service issues, but when services as a whole were considered it was private graziers who made most comment. There was a low level of access to health services, and disappointment with the loss of extension services. There was real angst for participants who tried to manoeuvre around the many obstacles involved in providing their children with an education. One of their goals was to provide their children with opportunities and many saw a sound education as being a basis for opportunity.

Challenges: Government processes, priorities and their impacts

In the context of being asked whether there were any social, economic or land management issues that impacted on their ability to meet their needs today or their children's ability to

meet theirs tomorrow, study participants indicated unequivocally that government priorities and processes have had a negative impact.

Processes

Processes represent activities where graziers interacted with government or engaged with government requirements. The processes about which participants raised issues about were participation and consultation, the idea that government was ruling rather than guiding or leading them, and being over-regulated. They identified limitations to their ability to participate in consultation processes, and disincentives that resulted from how consultations were arranged and operated. Graziers were discontented with how they found themselves being treated at times, by government staff. They objected to what they perceived as over-regulation with Occupational Health and Safety. There was a high level of comment with those of all ages and both genders commenting on processes, which demonstrated a breadth of concern. Gulf and private graziers were more likely than their counterparts to mention processes, and Gulf graziers to mention consultation processes. I wrote several memos that relate to these processes and how they are perceived, labelled 'consultation', 'participation' and 'governance'. I documented were that there was a high level of anger and discontent towards government. There was suspicion that government decisions were made prior to consultations being conducted and that the consultation process was merely a façade. Related to this was the idea that the government agenda was to 'take over'. I questioned whether these sentiments were related to the withdrawal of extension services and the increased level of regulation, particularly in the areas of environmental protection and Occupational Health and Safety. This appeared to be perceived as government replacing support for farmers with the regulation of farmers' behaviour. When these sentiments are combined with the contents of the earlier memo that documented that farmers believed that the bush was of fundamental importance, there was a sense that they felt they had become a victim of changed government priorities, and they were no longer in control of their destiny. I also questioned what the practices of increasing disillusioned and angry land managers, some of whom chose not to engage with government through consultations, may be. Would this sentiment result in civil disobedience?

Participation and consultation

Constraints on and disincentives to public participation were identified. Constraints were those things that limited prospective participants' ability to attend participation events and

disincentives were specific issues that discouraged attendance. The term ‘events’ describes a range of activities that involves participation in meetings, consultations or other styles of public involvement associated with government decision-making.

The cost-price squeeze for graziers that has existed for several decades has created time constraints for some graziers, an obstacle to participation which attracted much comment in this study. *Graham*, one of the company managers from the Gulf, who did comment, said:

> … most of the successful graziers aren’t on committees. I like to think of myself as a successful grazier and I’m on one committee because there was just no representation at all. … we’re at home really … we haven’t got time to go away, even though it affects us, our viability.

Time constraints are significant. People have to weigh up the best use of their time, and sometimes it means attending to the short-term issues such as making a living in the current financial year, rather than trying to influence long-term issues. As a result of the distances that travel to such events usually requires, the time needed for a two-hour meeting may be a whole day. This is extended in the next point.

Distance is a related constraint. *Stephanie*, a private grazier from the Gulf, recognised that her level of influence was constrained because of her reduced access. This was created because of the distance she had to travel, the financial costs this imposed and the time it took. She remarked:

> … the extent to which women get involved at that level … requires being financial enough to do it and also not as remote as me … I know for women in my area that’s a big sticking point … government agencies are interested in listening to your viewpoint because you are so remote … but we haven’t got the time or the financial sort of, to be able to travel those long distances … so we can only influence to a certain level … can only participate in that to a certain level.

Time and distance were significant constraints. Participation in public forums can easily be prevented or curtailed not by distance alone, but by the travel time and the associated costs. Added to this is the higher workload now carried by many graziers, which further limits their ability to leave the property. This contributes to them being outnumbered at such forums, a disincentive which is discussed next. These results were consistent with findings by Kelly (2001), who studied participation in the Australian rangelands.

A disincentive some participants spoke about was being outnumbered by non-graziers at the meetings they attended, as *Paul* from the Gulf, described:

> I went to a meeting … in Richmond … and they were discussing the future use of the Flinders River … I was talking to one of the organisers afterwards and they had a list of stakeholders in this river and we had Fisheries, Aboriginal groups, we had Greening Australia, Natural Resources Management Department, we had Main Roads, we had dozens of them, different groups that claim stakeholder status in the Flinders River. And I could be wrong but there might have been two landholders on the river that were classed as stakeholders … well there was no landholder group classed as a stakeholder …

Paul's remark raises points of relevance to this thesis. First, there is now a very strong interest in land management from a broad range of groups as listed in *Paul*'s comment and this interest is comparatively recent (Holmes 1986). *Paul*'s description is consistent with my personal observations from attending a range of meetings in both study locations during the exploratory visits and during the main data collection period. Second, this demonstrates the changing values of land; here graziers as a group were not considered a stakeholder group, yet they were responsible for the day-to-day management of the land in question. Graziers were discouraged from attending if they believed their voice would not be heard because they were outnumbered.

Another constraint was a failure to get an outcome when time was taken from running the property to attend a participation event. Not getting an outcome can be a result of being outnumbered; it means the time and effort taken were not adequately rewarded. Getting an outcome is important for the individual – or, as *Lawrence*, a private grazier from the Gulf, said, for the industry:

> I look at how much it's going to do for us, or the industry … 70 percent of the time I don't go, because I know it's going to be a waste of time. I would have flown all the way to Cloncurry, gone to the meeting and I just come home and said to my wife, 'the biggest waste of time!' … they can write a report saying 'we had … graziers … at the meeting', but they took no notice of us whatsoever.

This comment introduces the next point, which is the consequence of repeated failure of issues raised, or recommendations made, being adopted by government. *Bruce*, a private grazier from the Central West, became disillusioned by government's failure to act on recommendations resulting from government-initiated consultations. The following remark relates to a process in which he was involved, and it echoed a sentiment shared by others:

> … most of them 80 to 90 percent, that high … a lot of people thought, oh well go along with the process … spend a lot of time and effort, have your input and what's

> the bloody point, an exercise in futility … there's a lot of people, if something constructive was coming out it, would gladly give their time and I'm one.

Bruce no longer responded to invitations by government for consultations, and he knew of others who behaved in the same way. This is consistent with other research that found Queensland pastoralists and other landholders were cynical about participating in groups because their input was not included in the final outcomes (CIE 1997; Cocklin, Dibden & Mautner 2006). In addition to input being disregarded, no return for time spent in this way was a financial loss because it took time away from running the grazing enterprise.

Some graziers, after repeated experiences of being consulted but failing to have their issues adopted, had drawn conclusions about how this came about. This is highlighted with a remark made by *Jill* who said:

> … they say it's senior bureaucracy … that really run their own race … and we all know that the Minister's just their lapdog. So they're running the show, and they're the ones that come and consult with us. They know the picture! But, by gee, it's very difficult once they walk out the door; it's been turned around so many times it's not funny.

This quote described repeated experiences of consultation where government staff appeared to take seriously issues raised by graziers at the consultation event, but showed disregard for those issues in the decisions that were subsequently made. This is consistent with other research that found a deterrent to participation was a distrust of government bodies – a view that they did not listen and had made up their minds before the consultation (Kelly 2001). Despite the fact that a consultation is just that – asking for information or opinions – when participants were consistently left with the idea that their views would be taken into consideration and then those views were not reflected in the decision, this not surprisingly led to disenchantment. These participants were repeatedly involved in participation events but for no return. There was no optimism that the situation would change and many were cynical about invitations by government to engage in a participatory process.

The typical style of participation events was ascertained from observations and interview material. Graziers were very aware of how this style impacted negatively on them. These events were almost invariably some form of group process such as a public meeting or workshop. This is despite the research finding that people who live in semi-remote communities are more likely to favour one-to-one interactions over group processes (Shrapnel 2002). A related memo is titled 'environment shapes people'. This is where I hypothesised

that one result of the sparsely populated area was the lack of sporting or similar clubs which could provide young people with the opportunity to develop group skills. What contributed to this memo was my observation of the difference in behaviour of several people during public meetings compared with when I interviewed them. At the meetings they sat quietly with no expression on their face and did not contribute questions or comments. By contrast when I interviewed them they were animated, verbose and had many opinions. The group setting appeared to act as a restraint on their behaviour. The use of groups has the potential to marginalise. *Paul* from the Gulf spoke about the process for organising the timing of these events:

> You know I get to as many as I can but they don't always ring you up and say 'what's a suitable day for you?', they say 'this is when we're having it', and they bring all the people from Brisbane and Sydney and Melbourne and Townsville and so forth, so 'this is the day we're having it'. If you turn, up that's fine, and if you don't turn up they say 'there's no interest and we won't come down' sort of. You get a fair bit of that.

This quote demonstrates a lack of planning with members of the prospective audience. It also shows anger and cynicism from the grazier perspective. Typically events are organised with short notice – often one or two weeks, which is simply an inadequate time for many graziers.

Most events took place in regional centres – for example, Longreach in the Central West. It has commercial airline access which makes it attractive for people from Brisbane and other coastal centres. The opposite would be true for the majority of graziers. So the people who live reasonably close to regional centres have good access, and those who have sufficient resources to take the time off, must suffer the loss of income and carry the travel costs.

The purpose of the event was often unclear until it commenced. For example, there was an event advertised as a consultation but it was actually an information session and the people who attended thought they could influence the process only to discover that the decisions had been made. Participants were left feeling angry that their voice hadn't been heard. Mismatched expectations because of this lack of clarity prior to the meeting were also found by Kelly (2001) and Cox (1996). The unmet expectations engender feelings about a lack of genuineness on the part of the organisers and about suspected deceptiveness. When participants needed to choose carefully between various activities because of their time constraints, this was made difficult because their decisions were based on what was often limited information.

These are not uncommon criticisms of participatory processes (Cox 1996; Dovers 2000; Illsley 2003; Plein, Green & Williams 1998; Sarkissian, Cook & Walsh 1997). However, graziers could be further alienated and disengaged from these processes, at a time when it is of fundamental importance to our ecological future to engage them.

Being ruled and regulated

Participants felt they were being forced and controlled by government through policy and how it was implemented. They also believed that they were over-regulated. Older males and private graziers were more likely than their counterparts to make remarks that I coded as 'being ruled'. Company managers made few references to this. An example of the comments comes from *Michael*, a private grazier from the Central West:

> … a culture of … ruling … now the Department of Natural Resources as much as any other department … needs to have a terrific interface with the community because natural resources are 90 percent privately owned … but it would be their worst attribute.

He identified an issue that is important in the government's relationship with graziers. Although graziers are governed by regulations, voluntary compliance is relied upon. *Jill* expressed resentment about the government's use of power:

> … I know a lot of graziers are very down and crooked on the government … they're sort of wielding a bit of a stick because they've got the power behind them and we're the recipients of that …

Christine and *Greg*, private graziers from the Central West, used even stronger language to express their unhappiness. *Christine* said: '… the whole approach to primary industry or to graziers and farmers has been one of punishment and not one of reward'; she also said that the 'DPI are our policemen these days'. Her husband, *Greg* responded with: 'Yeah, they used to be on our side, one time. They're not now, most of them'. Participants spoke about the government getting rid of people who empowered graziers or challenged the government's authority, trying to get people to diversify their land use by 'just by hitting and hitting all the time' (*George*), and making decisions without consulting. To some extent, this reflects an increasingly regulated environment – an issue raised in the next section. There were strong negative feelings in a range of areas that centred on what they considered to be the government's inappropriate use of power, also found by Kelly (2001).

The level of regulation attracted the ire of many. The Occupational Health and Safety regulations that required training and the issuing of a certificate were targeted. There were several issues. The first one was that they were required to undergo training for which they believed they already had the knowledge and skill; this was seen as an impost. The second issue was that the level and depth of the training was significantly less than their existing knowledge; this was an insult. The third issue was that they had to pay for the training. A fourth issue was that such a high level of regulation was stopping young people from learning how to take responsibility for their own actions. Some of these issues are illustrated in the following comment from *Sharon*, a Gulf grazier:

> A guy used to go and oil his own windmill. He's got to have a rigger's ticket to do it now. Now, you're getting to the regulations that are killing the grazing industry. My husband and I pulled mills all our lives. I'd climb the mill. He'd climb the mill. Can't do it now. And if you send anybody up without a rigger's ticket or without anybody on site with a fully qualified rigger's ticket, and they have an accident, there's no Workers Comp, there's no insurance. There's nothing … so that sort of regulation is making it very difficult for graziers. The Workplace Health and Safety has just gone over the top and round the bend. And the sooner some sort of legislation or education comes in to get people to take some responsibility for their own actions, instead of running to blame somebody every time something happens, the better.

A comment from *Gary*, also a Gulf grazier, highlighted the absurdity of requiring those with existing skills to undergo training: '… I've been mixing dip since I was 15. Why do I need to be accredited to go over there and turn the tap on and run the water into the dip?' For *Tanya* it was not just that issue, but also the cost involved: ' … $275, one day, just for a piece of paper to say that you'd done it … we just can't afford that sort of thing'.

Although there was general acknowledgment that the acquisition of a certificate was a legal protection, there was great dismay that such steps were necessary. The comments illustrate a level of ill-feeling about the regulations.

Time constraints due to workload and distance prevented graziers from participating in consultations at a greater level. However, choosing regional centres to conduct the majority of consultations limited graziers' access because of their time and distance constraints. It also privileged those who resided close to regional centres or worked in them, and those who travelled by aeroplane – the majority of whom typically were non-graziers. The heavy use of group processes is contrary to what graziers are known to be comfortable with. For many graziers the failure to get an outcome for themselves at a consultation event, either because of

being outnumbered or because their issues were not taken on board, or later failing to have their issues or recommendations visible in post-consultation decisions, has resulted in graziers becoming disinclined to participate and cynical about government. A frequent lack of clarity about the purpose of the event contributed to difficulties associated with consultation events. In addition to the suspicion and ill-feeling generated by how consultation processes were conducted, these graziers expressed resentment with what one participant described as a 'culture of ruling', the misuse of power and overbearing attitudes.

Priorities

Participants expressed disgruntlement at what they perceived government priorities to be. They identified these as the environment, Aboriginal land rights and urban Queensland. The discontent had two dimensions. One was that a consequence of government attention on these issues resulted in a lack of attention to areas where participants believed they could be assisted by government. An example of how government could assist was by improving infrastructure. An extension of the first issue was that graziers saw that government preferencing these areas resulted in the marginalisation of their interests. This was perceived ultimately to be a threat to their future existence. Gulf and private graziers were more likely than others to take issues with these perceived priorities.

The areas that participants saw as priorities for government are consistent with the changing values attributed to land, discussed in Chapter 2. Although in the past rural areas have served multiple purposes, the industrialisation of agriculture placed the focus firmly on the role of production (Holmes 2002). More recently, however there has been a re-emergence of the multiple values and uses of land which have contested the hegemony of agricultural production. Holmes (2002, p. 142) described this as a 'radical re-ordering in the three basic purposes underlying human use of rural space, named production, consumption and protection'. The environmental and Aboriginal land rights described in this study represent protection values in Holmes' (2006) analysis. This discussion is taken up in Chapter 7.

The view expressed by *Bob*, a Gulf grazier, exemplifies not only the perspective and focal point of many of his contemporaries, but also where he sees the government's focus as lying. He stated the following:

> … the crux of the survival of an enterprise comes back to the dollars and cents. It sounds silly that I say that because most of the emphasis seems to be on these other

> issues … land tenure, land clearing, the ATSIC problem and so we can go on. But if you say how do we secure our commodity price? We can't. We've just been through a bend, short bend time and we're back here again, so the little boom time we had was just a pay back situation, so if you had an overdraft you got rid of your overdraft or you reduced your overdraft and here we go we need it all back again because we're back at that level.

There was a high level of discussion about perceived government priorities, and not unsurprisingly it was older males who were private graziers who were more likely than others to comment in this area. Many of these are people who took on grazing as a career in the 1950s and 1960s when farming was at its peak in Australia, with a very different set of polices than at present.

The environment

Comments about the environment as a perceived government priority fell into two areas. One was where it was clearly stated that government gave preference to environmental interests over production interests. The second area of comment included comments where it was stated that people who promoted an environmental agenda were given voice. This behaviour did not solely comprise actions by government; it also included government-funded organisations.

A reference point for some graziers was the earlier production focus of government. *Richard* from the Central West, who has now retired, emphasised this by recounting some history from his land:

> … 30 years ago when you had a leased property and this was one of them … DNR, they would come around and they would say 'OK, your lease is up for renewal. This property here' and … the old guys who had it … they were told 'Oh well look Harry you've got to pull some scrub. You've got to do something. You've got to develop this property'. They said, 'Oh we don't want to do that'. And they said, 'Well, you'll lose your lease if you don't develop'. So they turned round and they got a couple of tractors and they just went willy nilly everywhere without any management plan … and done something silly. This is 30 years ago; they were telling you 'You must do it. You've got to clear it!' … and now it's completely the opposite.

This demonstrates a significant change in approach by government. What emerged in this study, however, was that similar 'development' conditions continued to be made with lease renewals until as recently as 2000. As the Central West grazier whose lease had these conditions pointed out, these conditions contrasted with the vegetation-management

legislation which prohibited him from carrying out the work that would allow him to meet these lease conditions.

An issue of some concern for many graziers was regrowth. This is where trees or woody weeds grow in areas that have previously been cleared, or as a result of native species being destroyed through practices such as over-grazing or prolonged drought. This type of regrowth reduced the grazing capacity of the land and therefore its product potential. For graziers restrictions on removal of regrowth reflected a preference for environmental concerns over production. *Richard*'s assertion illustrates the concerns of many:

> Well, they're not letting people control regrowth, in any shape or form. And I think it's just going to make well, the land will be completely non-productive. Probably. People won't be able to graze it in order to live, unless they, you must do something, in my opinion, to keep that land viable.

Another concern raised reflected not only policy inconsistencies but how a blanket approach to policy to protect further environmental degradation can have a negative impact on livelihoods. *Christine,* a Central West grazier, spoke passionately about restrictions that have been created:

> The whole argument about salinity … I have stood up at conferences and asked scientists 'Do we have a salinity problem in Western Queensland?' and they say! 'In Western Queensland you don't have a salinity problem and you are never going to have a salinity problem because the salt, to be a problem, you also need moisture. Salt has to meet moisture in order to move, and if it's moving salt that causes the problem' … in Western Queensland our water table is just too deep for it to rise enough to meet the salt. There is salt! Under all of this country … most of Australia and Western Queensland. The scientists that I've asked tell me that it is never going to be a problem even without these floods, they said what gets shifted is silt not salt but yet, we've got all of these policies aimed at stopping us diversifying on the basis of salinity! Which is a problem we're not ever going to have! That's where we all feel so frustrated with the arguments about diversification and viability …

Like *Richard*'s comment on regrowth, underlying *Christine*'s comment there was a sense of exasperation about policies that they see as working against them.

The second area of comment about the environment is people promoting an environmental agenda were seen to be given a voice over those with production interests. This is consistent with the disincentives to participate in consultations – failure to get an outcome and being outnumbered. *Michael* spoke about what had been a controversial issue in the Central West:

> people down the river for all intents and purposes making decisions that affect people up the river … [and that] government's allowed one group to have decision-making powers over another …

This statement referred to a controversy some years prior to the current study about a proposed development. The proposal, which was to dam some of the surface water, did not proceed because of the anticipated down-river environmental damage if flow was decreased.

Bruce, from the Central West, commented on non-graziers influencing decisions:

> … the bloody Capricorn Conservation movement or something other bloody thing that they suddenly spring out of somewhere and there's two or three of them sitting around the table and there's only two or three producers, you know they've got the vote and they contribute nothing to towards the bloody economy in any shape or form and they want to dictate the agenda.

Paul, from the Gulf, said:

> Well there was no landholder group classed as a stakeholder and there was no other landholders classed as a stakeholder … I probably control, I don't know, probably … a total of 300 kilometres either side of the riverfront and I didn't get stakeholder mention … Natural Resources, the Fisheries blokes were … we had a couple of women from Greening Australia in Cairns or Townsville came to tell us what we should and shouldn't do with the Flinders River you know and they were classed as stakeholders but we weren't.

These comments are important because they underscore points of interest to this thesis. The graziers are immersed in the importance that agriculture has to the economy, and therefore the value of their work. The claims of others were not considered legitimate and were treated with disdain, which is consistent with the results of other studies conducted in the tropical savannas and rangelands that found conflicting values (Ash & Stafford Smith 2003; Holmes & Day 1995; Taylor & Braithwaite 1996). The experiences reported here are consistent with the hegemony of agriculture being contested (Wilson 2001).

Aboriginal land rights

The majority of comments made about Aboriginal land rights referred to the consequences of the *Native Title Act 1993*. The issues raised by participants were the anxiety created by this significant change, loss of rights and control, a sense of injustice and resulting tangible inequities. Perhaps because all of the Gulf properties in the study were leased, and many of the properties in the Gulf I visited were under native title claim it was Gulf graziers who were

more likely to comment than their counterparts. Predictably, private graziers were more likely than company managers to express concerns because of the variable impact.

The *Native Title Act 1993*, which arose from the High Court *Mabo* case in 1992, recognised the entitlements of Indigenous Australians to their traditional lands according to their traditional laws and customs. It also determined that native title has been extinguished on freehold land. The issue of pastoral leases was not dealt with, but it was assumed at that time that native title was extinguished on these leases. The *Native Title Amendment Act 1998*, which followed the *Wik* High Court decision in 1996, determined that native title cannot exist on freehold land or land held under a perpetual lease, but can coexist on land held under a term lease (pastoral holding). Where there is a conflict between native title rights and the rights of the leaseholder, the rights of the leaseholder will prevail (National Native Title Tribunal 2004a). Since the *Native Title Amendment Act 1998*, no applications to upgrade term leases to perpetual leases have occurred, which may be a result of 'future act' provisions which prevent action that would extinguish native title (National Native Title Tribunal 2004b). Upgrading a term lease to a perpetual lease would do this. The *Mabo* decision represented a watershed in property rights. Until then, formal multiple tenure titles did not exist.

Despite Aboriginal land rights being introduced approximately fifteen years ago, there continues to be ongoing concern. *Shane*, a private grazier from the Gulf, made a telling comment: 'What's on everybody's mind is native title, it's the biggest hurdle … whole Shire is under claim'. This anxiety has continued from the 1990s when native title was prominent, where there were many unknowns in what were then unchartered waters. *Christine* illustrated many of the concerns that were held at that time with her view:

> And of course that was one of the issues that we were all frightened of with native title, was not being able to control who comes on [the land] so the traditional owner can come … it was a legal right, he can invite whoever he wants so … they invite all the idiots from Melbourne? And they haven't got a clue about respecting country. And what if they injure themselves on our place? Who's responsible for the public liability? Does that mean then that we have to maintain our roads to as high as public use standards? Or we can be sued, so, it's all of those issues … all of the country people who were affected by it, were horrified that busloads of people could turn up as a result of native title.

As stated, this legislation was a watershed in property rights and it is this changed direction that is the source of continuing anxiety for many graziers. Their concern is that their property rights will continue to decrease, which erodes their independence – an attribute of the way of life that they are known to value very highly, as discussed in Chapter 2.

This anxiety was fuelled by the native title claim-making process, which was very slow; in addition little information about the process could be elicited from authorities. Participants perceived that graziers now had fewer rights since the native title legislation. *Christine*, a private grazier from the Central West, talked about the change this brought to landholders:

> …. a pie chart before the *Wik* decision where there was only a small slice taken out as being the rights reserved for the Crown and the other rights were with leaseholders, now we've got this very narrow slice being our rights and all of the other rights being potentially owned by native title holders so, for us, that means that all of the responsibilities are with us, land management, environment, financial viability, sustainability, etc. and none of the rights! … Because they can't lose native title … whatever damage they do, they can't be stopped from coming here so they've got all of the rights and none of the responsibilities.

The issue of rights versus responsibilities mentioned above was an issue for several graziers. The comparison that *Christine* draws between native title holders not being able to lose title to the land is congruent with many graziers feeling that they were at risk of losing title to their land. This is drawn out in the discussion under the heading, 'Combined priorities', where graziers note their tenuous position because of combined environmental and Aboriginal land rights issues. Graziers perceive that the importance given to these other issues marginalises their own.

The sense of injustice felt by many was apparent in *Kevin*'s comment:

> … two titles on one piece of land. We've got native title and we've got legal title. Provided you set up two titles to the one piece of land you must create factions for the rest of time … we have a lease, which every year is more and more controlled by government regulation, but at least they're dealing with one set of people and one ownership … you pay many millions for these places but actually you don't own them. They issue another title that says yes you people do have title to that land too.

This situation also created an ongoing conflictual situation. Concerns were raised about inequities that are the consequence of native title legislation. The following observation from *Graham*, a company manager from the Gulf illuminates the differences:

> … from my point of view native title and land rights and those kind of things are really just ripping the social fabric of the bush apart really … I wouldn't want to be

> black for quids, but they certainly see the inequality of it, but … from our point of view we see the same thing, you know. Where if I want to go and get my child vaccinated it'd cost me $70 it doesn't cost them anything. If I wanted to transport the kids to school, we've got to pay for it. They don't have to pay anything for it … if we wanted to get [national grid] power on here … it'd have ten times more chance if there was a black community on that side of me and I was getting power from this way; that way I would get power … I've saved up for years and years and years to buy a four wheel drive so I could go to town any time of the year. Always had two wheel drives; bought a four wheel drive. Before I was doing that there was just black people after black people after black people going past in the same $60,000 motor car and all they had to do was make two or three payments on it; if they couldn't meet the rest of them, then ATSIC would pay for it, you know. That has stopped. But that's how it was, you know. So they'd be driving past in like your Nissan Patrol or *Paul*'s Land Cruiser. They just got dozens of them up there, dozens of them. So we see the inequality, that side of things …

Not only does *Graham*'s story demonstrate inequities, his initial comment reveals what he considers to be the negative impact this has had on relationships between Anglo and Aboriginal Australians in rural Queensland.

Another comment from *Graham* draws attention to infrastructure issues. What he describes refers to an agreement between the Pasminco mine in the Gulf and the traditional owners of the land:

> Everybody in Gregory township runs their own power plant and pays for their own diesel costs, a huge amount of money, probably nearly ten times what it would cost a normal family in town to pay for power. There is an Aboriginal community there. They get power supplied. They have a powerhouse and everything there … just for the Aboriginal community … they don't service it, they don't go near it, they don't look at it; power runs out, they just ring somebody and they come out and fix it up.

A second Aboriginal community, Doomadgee is supplied with power under the same mining agreement. Under the same agreement a grid power supply from Mt Isa to the century mine passes by or goes through grazing properties but the residents are unable to access it because an uninterrupted power supply is required by the mine.

When I asked *Phillip* why some services were provided to Aboriginal Australians but not Anglo Australians, or why that latter had to wait longer for the services, he said that it was political, had a long history of being this way and that the Anglo Australian people that lived there were used to it. He said that it allowed politicians to say 'we did this', which was claiming any kudos that may have resulted.

Participants were aware that these policies were in response to more fundamental inequities such as the poor health and low educational achievement of Aboriginal people. They concluded that despite government attempts to rectify Aboriginal people's situation, the 1967 referendum that gave Aborigines the same legal status as Anglo Australians, had created more problems than benefits for Aboriginal people. A number of people felt that the current life chances of Aboriginal people were inadequate, and a direct result of government intervention. However, the policies that were designed to right past wrongs for Aboriginal people were contributing to a division between people who were neighbours.

Urban Queensland

The third priority that participants raised, which they considered not to assist them, is what I have coded as 'vote-catching'. This is the term participants often used which identified their cynical view of politicians and government. Graziers perceived government to have the goal of being re-elected by making decisions that pleased the largest group of voters – who are urban Queenslanders. Making decisions based on vote-catching rather than a more socially or economically responsible approach is not an uncommon claim made about government. The comments made by *David* and *June*, from the Central West, in the following interchange echoed the sentiments of many:

> *David*: The government's interest is in vote-catching.
>
> *June*: Being elected in three years' time.
>
> *David*: The incentives are for people who live on the coast. Just take for instance the price of petrol. And you only have to read any trend, you know, globalising. If you live out here you're finished … putting it on a bigger scale it's like Australia, the votes are on the seaboard. That's where the representatives come from, that's where the laws are made, so they say the country people are just bloody bellyachers.

This accurately identified that the majority of the population live on the eastern seaboard and with the current electoral system, most votes are therefore on the seaboard. Indeed 85 percent of Australians live within 50 kilometers of the coast (Bourke & Lockie 2001, p. 5). Correspondingly, rural people perceived their interests to have become less important, politically and in other ways. The issue raised above is not about economic efficiency but rather about equity.

Combined priorities

It was when the perceived government priorities of environment, Aboriginal land rights and urban Queensland were combined that participants expressed greatest concern. This was

because they perceived each of these interests to undermine theirs, so when any two were combined the threat was considered to be greater. *Paul*, a company manager from the Gulf, talked about rural residents carrying the burden of environmental care:

> It appears to me that as far as environmental issues in Australia go, rural Australia is being asked to support the environmental concerns that all Australians have got. In other words people in the city are not concerned about what goes down their drains … or how many cars they drive or how many new roads and houses they put up. They're not concerned about those things. What they're concerned about is if I cut down a tree, it's got to be my cost. If I try to develop more country it's a concern to them. They still want good food. They still want clean and green, but that's my cost not their cost. So they want the cheapest food they can get at any expense as long as we don't damage the environment … don't use too much water, don't damage the riparian zones along the rivers … as long as we do all those sorts of things, they're happy. As long as they don't have to contribute … themselves … change their practices …

The sentiment expressed in this quote, that rural Queensland supported the varying needs and desires of urban residents but received little recognition and no recompense for it, was widely held. The message here was that graziers felt they were bearing the cost of the burden. This result is consistent with other research which has reported that landholders feel urban people exert influence on their land management practices, and that the environmental work that was conducted by landholders is undervalued by urban interests (Cocklin, Dibden & Mautner 2006).

The impact of combined environmental and Indigenous priorities is described by *Hugh*:

> There are three systems working, there's the government, the Aboriginals and the landholders … meetings on leasehold … how the DNR and the DPI and the Aboriginals, how we thought that we should manoeuvre ourselves around in this system, any ideas we had to benefit the system. I said to this bloke that was presenting this, 'You talk about what *we* are going to *do*'. I said 'What are the government and the Aboriginals going to *do*? … you have no responsibility, all the onus is on the people with the lease'. I said 'You have no intention of *doing* anything for the land, it's us that's got to *do* it. You will tell us what we have to do'. I said 'That's no bloody system to be in mate that's crazy'. And he just sidestepped that … but it's true, you've got three people in partnership in these leases and yet there's only one person who's responsible, and out of the three he's the one with the least amount of money to do anything with his land to maintain it ecologically and heritage-wise for Aboriginals …

The issue of rights and responsibilities emerged again in this quote, as did the challenge to production as the most important use of land. The ebbing of graziers' independence is apparent here. Again, the frustration mentioned earlier – with being tied to what is found to be a restrictive system – is apparent.

Christine, from the Central West, talked about the third combination of priorities – Aboriginal land rights and environmental:

> It's a terrible problem and there's no certainty because nobody really knows where it's heading, nobody knows what the court's going to rule. And what I think is really worrying at the moment is that the state government is going to come out with a policy – it's been reviewing leasehold land over the last little while, and I think that what they are probably going to do and … the signals that we're getting from the Aboriginal leadership too, because they are now very reluctant to take any of these claims to court cause I think they want governments to do the work for them so that you have leasehold land, a term lease … you will only get renewal if you agree to have an Indigenous Land Use Agreement (ILUA), which is in effect an acceptance that you have native title, so you will get no opportunity to defend yourself against that. Even though no Aboriginal people may have been anywhere near the place for a hundred years and might live at Inala or Woodridge it won't matter. The state government, in cooperation with Indigenous leadership; it's just a blanket on everything, and you won't get lease renewal unless you agree.

The combination of environmental and Indigenous priorities presented a high level of concern about their future for many study participants. This is discussed below under the heading, 'Impacts'.

Study participants identified the environment, Indigenous rights and urban Queensland as government priorities. These priorities were not ones that graziers considered assisted them at all. In fact, they described how they saw these priorities working against them. The policy environment was perceived to support environmental interests rather than the production interests of graziers. The *Mabo* decision represented a significant change in land rights and the consequences of this decision continue to impact. The combination of any of these three issues held the greatest concern for these graziers. Participants criticised what they saw as the government behaving in a way that would have them re-elected, which involved meeting the needs of the much larger urban Queensland population. The implications these results have for sustainable development is discussed in Chapter 7.

Impacts

The major impact that study participants identified from the government processes and priorities previously discussed was insecurity of tenure. Another type of impact was that rural industry and residents were treated as secondary. It is apparent from the comments made by participants that a significant impact was a high level of ill-feeling, particularly towards government. Although private graziers were more likely than company managers to raise

these issues, the comments were pervasive, with those from all ages and both genders contributing.

Older rather than younger participants, and predictably, private graziers were most likely to comment on insecurity of tenure. There were two types of concerns created by Aboriginal land rights legislation for study participants. The greatest concern was the sense of anxiety about what they saw as their very insubstantial property rights. Another concern was about the practical implications, such as not being able to upgrade to a more secure form of tenure or the barrier to development this created.

Hugh showed how very vulnerable many felt about their future with this remark:

> They're not guaranteed that they'll get their lease back … if there's an application by Aboriginals … or they haven't been seen to have been good lessees, they will take it off them! So if you made a mistake in pulling a bit of timber that you're not supposed to pull, and you got off-side with the government and they decide they'll take your lease off you when it comes up for renewal … you can lose everything tomorrow through the stroke of a pen.

This perceived low level of insecurity of tenure has implications for how land is managed. If they perceive that their future may be short lived, will they manage their land for the longer term? This question is addressed in Chapter 7. Graziers' concerns about tenure are consistent with those uncovered by other research. Dames and Moore (1999) found that security of tenure and native title were key issues for Gascoyne-Murchison pastoralists and a survey of Central West graziers found that security of tenure and native title were ranked second and third concerns after economic returns (CIE 1997). There was disquiet that even freehold tenure, once considered the most secure form of tenure (DNR 1998), was now less secure. Some graziers believed government was more willing today to resume freehold land than in the past, 'so free holding is not a protection' (*Frank*).

Being unable to upgrade a lease ultimately prevents graziers from freeholding their land because this would extinguish native title. As previously stated, upgrading a term lease to a perpetual lease is no longer an option because of the 'future …' clause. This step prevents the next step of upgrading to freehold tenure, which provides the highest level of security of tenure. In this sample, 33 percent of the properties (for which the information was available) were under term lease, so ultimately are prevented from obtaining freehold tenure by this clause.

The barrier to development operated on the property level where grazers hesitated to commit funds to infrastructure development on leased land because of the low security of tenure. Unsurprisingly, private graziers were more likely to raise this than company managers. This barrier also operated at the community level. An example of this occurred in the Gulf where the uncertainty of the claims process, and the length of time it takes, had caused a mining company to move elsewhere – which meant lost jobs and lost income for that community.

A consequence of government processes and perceived priorities was that many participants believed government treated rural industry and rural residents as secondary. John said: '[When] Whitlam was in he just said "well, bugger the bush. If they're stupid enough to live out there, that's their problem"'. This comment reflects the position many of these graziers felt they now held in society.

Participants in this study indicated overwhelmingly that they were not only disappointed with government priorities and processes, but were annoyed and frustrated at what they saw as shortcomings and impacts. They spoke at length and in depth about these concerns. Regardless of age, gender, location or grazier type, participants expressed annoyance or frustration. Underlying many comments were emotions ranging from disappointment through resignation to anger. Study participants had these negative feelings because they saw these processes and priorities as threatening their future.

Government processes and perceived priorities posed significant challenges for this sample. They reported constraints that marginalised their involvement in consultations, feeling they were being ruled by the overbearing approach taken by some public servants and that the level of regulation in some areas was carried too far. Of greater concern for these participants were what they perceived to be the government priorities of the environment, Aboriginal land rights and urban Australia. The crux of their concern rested with the belief that the government focus not only neglected their production interests, but contributed to lessening the security of their already fragile tenure. For these graziers who were shown in Chapter 4 to have chosen what is a highly valued way of life, and who have chosen to continue it despite the hardships, a loss of tenure would represent a loss of what they most value.

Conclusions

The context of running a grazing enterprise in the twenty-first century in Queensland presents a range of challenges. Many of the contextual issues raised by participants have already been well documented. The results of this study are consistent with the previous studies that have examined this context for remote graziers (CIE 2000; Dames & Moore 1999). However, the combined impact of environmental and Aboriginal land rights appears has not emerged previously.

Being market and season dependent were key characteristics of these grazing enterprises. When low commodity prices were paired with poor seasons, this created difficult financial circumstances. Distance impacted because this increased the costs of freight and reduced recreational access. The (different) climatic extremes in each location area had economic and social impacts. Reliance on sub-standard infrastructure, such as poorly maintained roads, an out-of-date rural telecommunication system and for some, expensive power generation reduced their ability to maintain financial viability. In addition to this, the low levels of access to basic services such as education and health have created a context where everyday life is substantially different to the lives that most urban Australians live.

The distances and cost-price squeeze have contributed to participants' inability to have their voice heard in consultations. Increased environmental awareness and Aboriginal land rights which represent conflicting values about land use, and how such processes are operationalised, have contributed to graziers' sense of pressure and loss of influence in consultation processes. Many participants felt ruled and regulated as a result of the way government operated and the increased regulation, when what they wanted was guidance.

The perceived government priorities of environmental protection, Aboriginal land rights and urban Queensland were contrary to those of the graziers, which were production focused. In the 1950s and 1960s, when many of these people were growing up or took up farming the government had a strong production focus. The graziers took issue with these perceived priorities because by default they marginalised the interests of the graziers. The perceived preferencing of environmental interests impacted negatively on the ability of graziers to realise their goals, which were to develop their properties to increase production which in turn would assist them to maintain financial viability. Aboriginal land rights represented a turning

point in property rights, and the impact of this has endured. Anxiety remains about where this comparatively new direction in property rights will lead, because many of the graziers in this study were directly affected through native title claim applications. Government was viewed as pandering to the interests of the urban majority. Increased insecurity of tenure for graziers was the major impact when the perceived government priorities of environmental protection, Aboriginal land rights and urban Queensland were combined. Their concern was that their future was at stake.

The study locations were differentiated by Gulf graziers being more likely to comment on climate and distance, and on infrastructure, whereas Central West graziers were more likely to comment on there being fewer services, in particular telecommunications. Gulf graziers were also more likely to identify government processes as an issue, as well as the perceived government priorities of Aboriginal land rights interests, and combined Aboriginal land rights and environment interests. There were differences between private graziers and company managers in several areas. Markets were a more significant issue for private graziers than company managers, because unlike private graziers the company managers were reliant on markets for their income. Private graziers were also more likely than company managers to comment on the loss of extension services. It was the private graziers who spoke most about the government processes, particularly consultation processes and being ruled, and the perceived government priorities of Aboriginal land rights, combined Aboriginal land rights and environmental interests, and the impacts of decreased security of tenure and constraints to development.

In Chapter 7, these observations will be positioned in the relevant literature and considered in terms of what this means for graziers' perceptions of sustainable development.

Chapter 6: Enterprise management

Introduction

This chapter describes how graziers manage their enterprise to maintain financial viability. Like Chapter 4, which described the social component of farming, it is set at the property level; however, it contrasts with the previous chapter which considered the broader influences on graziers. As with previous results chapters, the graziers' words are used to illustrate points made in the analysis. It is in this chapter that most differences appear between the study locations and between private graziers and company managers. The differences show greater comment from Central West than Gulf graziers on business strategies. The differences between private graziers and company managers may reflect the different pressures under which each group works. The private graziers are seeking to manage not just a variable climate, but also volatile international markets, whereas for company managers these responsibilities are shared within the company. For example, one strategy used by pastoral companies is to shift stock from drought-affected areas to other areas, which is not an option for the small family farmer.

This chapter demonstrates that the Australian government policy impetus of the 1990s which demanded that farmers focus on the business aspects of their operation, has been heeded. Graziers in this study are attempting to meet the challenges of being a grazier in rural and remote Queensland early in the twenty-first century by taking a whole-of-enterprise management approach and adopting land management practices that promote long-term productivity. The whole-of-enterprise approach is conducted by running the component parts, the business, the land and the livestock as one enterprise (see Table 8). The whole-of-enterprise management approach was highlighted in a memo labelled 'managing' that I wrote near the completion of data collection. The concept of management included not just having adequate knowledge in the required areas, but being able to put it together to achieve the desired outcomes. This applied not just to running a grazing enterprise but more broadly to achieving success in business. This concept of management also signalled that the skills required on the land have changed. The knowledge and skills that enable this to occur are from multiple sources and several disciplines which are integrated and acquired over time. The land and stock management knowledge is developed over a lifetime. Business management skills are a recent addition and have been acquired in response to the pressing

financial situation caused by the long-term declining terms of trade discussed in Chapter 2. Study participants reinforced during the result feedback trip that they were forced to take a stronger business focus in order to survive financially.

This whole-of-enterprise approach to farming represents a significant change from the mode of farming in the post-World War II period when farmers focused solely on increasing the production of livestock and grain at the expense of the land. As discussed in Chapter 5, this reflected the government priority of the time, which was to relieve food shortages (Argent 2002). A claim made by Tanewski, Romano and Smyrnois (2000), consistent with my literature search, is that much of the literature about farm business management is about how it should be conducted. However, there are some exceptions.

Study participants focused on the business component of the enterprise, over and above the land and the stock. The only 'people' issues that emerged in this study were recruitment and retention issues around employing staff and the importance of providing their children with opportunities. The latter was often done through further education or training, and it was more likely to be mentioned by private and Central West graziers than by their counterparts.

Table 8: Components of enterprise management

The business	*The land*	*The stock*
1. Goal: financial viability 2. Strategies: development, efficiency planning; economies of scale; knowledge; financial management	1. Caring for the land 2. Over-grazing 3. Pests	1. Breeding 2. Feeding 3. Management

The business: Making a living, 'not a million'

Business goal

The business goal was participants' need to remain financially viable. This was more likely to be mentioned by private graziers than by company managers. The goal is to make a living, 'not a million'. As *Laura* quipped: 'If you're living here it's for the lifestyle, not for the money cause there isn't any …'. *Laura* was a woman in her 20s who worked on a large Gulf

property. *Nick* was in his 50s and owned a small property in the Gulf. He stated his goal as survival:

> My primary issue at property scale is survival … that's why I'm there, is to survive. Hopefully make a reasonable sort of a living, look after my country, be able to hand it on, that's survival.

Some private graziers compared themselves to large pastoral companies and indicated that family farmers were there for non-economic purposes, whereas the large pastoral companies were perceived to be there for economic gain only. *Jill*, a private grazier in her 50s from the Central West, made this comparison:

> … we're not against the big organisations, the AA companies and the company places, they've got a place and a very good place in the bush … [but] the big ones, like the National Mutuals and things, they get tough and they're gone, because everything depends on that bottom line … whereas we're here for more than the bottom line.

The comparison that *Jill* made alludes to the social component of family farming discussed in Chapter 4. Although the company managers in this study valued this social component highly, as did the private graziers, decisions about property sales in pastoral companies are made at a more senior level.

Hugh, also from the Central West, captured the concerns and priorities of many with the following comment:

> Well, you can't have sustainable industry, I don't believe, and sustainable ecology as well … because as I said, the skyrocketing costs of … you've got to keep developing otherwise you're just not there; or increasing your numbers, you know it just … I don't know how they're going to get round it. Very difficult. Sustainability is something that is close to our hearts and we'd like to see it, *our* sustainability is a lot closer.

This statement identifies several salient issues in this thesis. First, it refers to a central issue in sustainable development: that development should occur in a way that is environmentally sustainable. *Hugh* concludes that it cannot be done. His rationale for this conclusion is the second point – the cost-price squeeze is managed by increasing production. The third point is the priority that is demonstrated. This family's personal goals are given priority over environmental concerns.

There is an abundance of literature that shows the primacy of social goals in farming (Chapter 2). Agrarianism demonstrates the enduring value given to farming and a rural landscape.

Literature identifying the goals and values of farmers has consistently found that non-economic goals are important (Gasson 1973; Gasson & Errington 1993; Holmes 1986; Holmes & Day 1995; Kerridge 1978). As the results in Chapter 4 show for this sample, the social component of farming is very important.

The next section of the chapter describes the business strategies used by the graziers. This is followed an examination of their land management approach and finally comment on the livestock.

Business strategies

A range of business strategies were implemented by study participants to meet the goal of financial viability. These were development for production, efficiency, planning, economies of scale, knowledge and financial management.

Development for production

Properties were developed by building infrastructure that promoted the increased production of livestock. Most often participants described water infrastructure, but development also included broadscale tree clearing in the past and fencing. For some, development included off-farm infrastructure and services that would aid on-farm production. Private graziers were more likely than their counterparts to mention development.

The focus for younger men was on-farm infrastructure. *Tim*, a private grazier from the Central West, gave an example of a widely-used tool:

> … another huge infrastructure thing is the invention of polythene pipe. It's totally revolutionised the way that we manage our land through being able to put waters where we want them … it's made a huge difference to the bush.

The importance of this comment is that it identifies a strategy with the potential to increase production while protecting the environment. A concern raised by Stafford Smith, Morton and Ash (1997) is that such strategies need to be introduced into the broader context to ensure they are used appropriately. Polythene pipe has been a great asset to development in the bush. It allowed the building of water infrastructure by increasing the number of permanent watering points on a property, either through capping and piping artesian water to troughs or building dams and pumping water to troughs. One participant recounted: '… as one bloke said to me once "if you took poly pipe and rural power off me I'd leave the bush; they're the

biggest boons to operating"'. During the fieldwork period substantial government incentives for capping and piping activities were available, though the costs after the subsidy usually ran to five or six-figure sums. The production benefits of the increased number of watering points identified by participants included quicker weight gain because stock walked shorter distances to water for their daily drink. In the last 50 years in central Queensland the number of watering points has increased so that the mean distance to water has halved (Fensham & Fairfax 2003, p. 417). Where artesian water is piped instead of run through open bore drains, the cleaner water can improve calving percentages (*Bruce* reported a 5 percent increase).[13] *Sam,* a company manager in the Gulf, reported that they intended increasing the existing 250 kilometres of piped water in order to increase their stocking rates and turn off cattle at a younger age because of the resulting quicker weight gain (stock are sold by weight). This was part of the company's business plan. The environmental benefits of increasing the number of watering points include minimization of soil compaction by stock because fewer water at each point and paddocks are grazed more evenly. Running artesian water through pipes instead of open bore drains reduces weed infestation. An unintended consequence of more permanent watering points is that this enhances the survival of kangaroos, dingos, wild dogs, pigs and birds. Kangaroos have a significant financial impact by causing pasture loss, which includes paddocks from which stock are excluded, and which are being 'rested' (Norbury, Norbury & Hacker 1993).

Although much of the tropical savannas area is lightly wooded, some areas have made productivity gains through broadscale tree clearing in the past. *Tanya*, a private grazier from the Central West, described their approach to development:

> … it used to run about 160 head of breeders, but since we've pulled and we've got the buffel growing, we've just doubled the carrying capacity which is giving us money to put more money back into it, like dams and things.

'Pulling' here refers to tree clearing and buffel is a type of grass. Doubling the carrying capacity means twice as many stock were put on the same amount of land. This quote is important in this thesis for several reasons. First, although broadscale tree clearing is was banned in Queensland under the *Vegetation Management and Other Legislation Amendment*

[13] In the past, water from the Great Artesian Basin bores flowed constantly, and flowed into open bore drains. In an endeavour to reduce the loss of water, and environmental impacts of bore drains, a capping and piping scheme was introduced which offered a subsidy to farmers to cap and pipe their bores. When a bore is capped through engineering works the flow can be regulated or stopped. Polythene pipes replace the open bore drains.

Act 2004, to 'protect … rich biodiversity … and address … salinity, soil degradation, erosion and declining water quality', *Tanya*'s description demonstrates the significant productivity benefits it has provided (DNRM 2005, p. 1). Second, the loss of productivity from further clearing has implications for how people affected by this legislation will manage the cost-price squeeze in the future. This loss of income was recognised by the financial assistance package provided with the legislation (DNRM 2005). The third point is made by drawing a comparison between when the NSESD policy was established in 1992, with the goal of 'development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends' (DEH 1992, p. 2), and the date when the vegetation management legislation ceased all broadscale tree clearing, which was December 2006 (DNRM 2005), a period of fourteen years.

Older participants also spoke about development. In addition to building property infrastructure (on-farm) they commented on the importance of off-farm infrastructure that would assist production. *Jill*, a private grazier in the Central West, gave several examples of this type of development:

> … development must take place. Well, I think in a number of ways. And I think that development's starting now, with the advent of things like the Resource Consulting Service, schools and things, different ways of farming … I think there's got to be a lot of development waterwise … I don't say we need much more water, but we need to use it wiser. We've got 321,000 gallons an hour coming out of the ground up here on this property. And we've got no problems with water, its fantastic! But it could be used a lot wiser … the other thing … that has to be attended to is our transport … you probably heard of the concept of fast rail from Melbourne to Darwin … instead of our stuff having to go all the way to Brisbane or Townsville or Rockhampton … it's to be able to go to … Aramac or something and put it on the fast train and head it to Darwin – they call it the Salad Bowl.

This assertion makes several points that are relevant to sustainable development. The first point is that new approaches to farming are being taught. This refers to a comparison between what had been an exclusive focus on production with a more holistic approach such as by the Resource Consulting Service. This is a private organisation that seeks to move people towards their visions and goals, reduce cost of production, reverse land and water degradation, improve communication and negotiation skills, increase biodiversity, manage commodity price variability and support succession (Resource Consulting Service 2008). This organisation is one of the many to have emerged since the withdrawal of the state from the provision of extension services. Later in this chapter participants report a need for knowledge

acquisition, which confirms other findings (Taylor 2003). The second point is the awareness of the loss of artesian water, which on this property is uncapped. The third point relates to a proposed solution to the freight costs already discussed in this chapter which contribute to the cost of production, and the development of new markets.

Efficiency: Minimising time and labour costs

The purpose of the efficiency drive was to reduce input costs. Most participants mentioned operational efficiencies on the property, but streamlining administrative tasks was also regarded as an important area. As a consequence of the cost-price squeeze discussed in Chapter 2 in conjunction with dependence on consistently unpredictable international markets (Wright & Kaine 1997), those who have chosen to continue farming have developed a number of strategies to accommodate this. This confirms the finding by Stewart (1996, p. 50) that 'the need to control costs while maintaining or enhancing output' was one of three overriding concerns for the northern beef industry. For smaller operators who do not have the capacity to increase the size of their holdings, reducing personal and household expenditure – which has also been described as self-exploitation – is one option (Bell & Pandey 1997; Reinhardt & Bartlett 1989).

An efficiently run property is one where time and production costs are decreased and maintained at a low level. Although efficiency does not always equal effectiveness, these study participants were managing for results, because it is the financial outcome that counts (Armstrong 1990). The pervasiveness of the drive for efficiency is demonstrated by remarks being made by those from both study locations, by private graziers and company managers, of all age groups and both genders.

The following comments illustrate different but similar views that reflect the independence and self-sufficiency so favoured by economic rationalist policies (Higgins & Lockie 2001), but not inconsistent with what many graziers value. *Sharon*, a private grazier from the Gulf, had very clear views about economic efficiency: 'I think if they can't survive, it shouldn't be there. You know, they've got to be viable. You have to be! And if you're not, if it isn't working, get out of it'. *David*, a private grazier from the Central West, remarked on the changed government policy that necessitated the prioritising of efficiency:

> It's got to change obviously. It's changing gradually when you think what happened during the wool recession … when people got into trouble financially they'd [the

> government would] support them and in hindsight, people were basically inefficient. People will sink or swim now. There's a new generation of people coming along now that are more efficient.

There was much comment on how participants achieved operational efficiencies. *Tanya,* a private grazier from the Central West, explained how they were reducing time costs through infrastructure development on their second property: '… we're just trying to get it up and running so that it takes a little less time … we're trying to put fences around all the waters … so we can trap over there'. Trapping cattle is where the water is fenced in a small paddock where the gates consist of weighted bars on a hinge. The cattle learn to push the bars to open the 'in' gate to get to water, then the 'out' gate back to the paddock. To muster the cattle the 'out' gate is shut. This is a significant time and labour-saving device because it could take several people several days to muster the paddock using the traditional approach. Trap mustering takes one person 24 hours because cattle drink once a day. In another illustration of the drive towards increased efficiency on grazing properties, *Allen,* a company manager from the Gulf, described a drafting system he created that reduced labour costs. Similarly, *Beth* and *Matthew,* private graziers from the Gulf, also aimed for efficiency by making the decision about which meatworks they sent their cattle to, based on the most cost-effective transport option. An option that large properties had to increase efficiency was employing experienced staff because they required less orientation that those without experience. As *Shane,* a private grazier from the Gulf, said of his experiences with inexperienced staff, '… you have to spend a hell of a lot of time just educating them to the bush, to the rural side of life to start with and then you go out and do your work practice'. Another illustration of administrative efficiencies came from *Cathy,* a company employee from the Gulf, who ran training for a group of staff from several properties at one central location to reduce the travel costs charged by the trainer. This demonstrated an economy of scale available to pastoral companies.

The increased volume of office work required streamlining administrative processes. This has increased, as *Matthew* claimed: 'We got the mail once a week before … do your mail in half an hour … now we get two mails a bloody week and you're probably two hours longer of a week'. The introduction of the Goods and Service Tax increased the office work substantially, but as *Phillip,* a private grazier from the Gulf, commented: '… there is more paperwork … [but] better records have to be kept'.

Planning

Study participants spoke directly about planning for drought and business plans. Planning however, underpinned a number of the other strategies listed. Noticeable by its absence was the explicit mention of succession planning as a business strategy. Mention was made of succession but usually in the context of the challenges it posed; however, some spoke of existing succession arrangements. Those in the Central West were more likely than those in the Gulf to talk about planning. This was particularly so for forward business planning, and usually about planning for drought (which is a type of business planning). As previously noted drought was more of a concern for Central West participants because there was a reliable wet season in the Gulf.

Planning was identified by Fayol in 1949 as a fundamental function of management, and despite much criticism of this work, it still makes a useful contribution to understanding management (Lamond 1998). Although planning does not reduce risk, it has the advantage of reducing uncertainty, and it can make a business more economical (Dixon 2003; Tanewski, Romano & Smyrnois 2000).

An illustration of planning for drought came from *Bruce*, a private grazier in the Central West. He commented on planning for drought in the context of a cyclic cattle market and debt management:

> In Australia we have a history of drought; [we] need to plan to survive the worst drought to be viable … we'll build our female [herd] numbers up … in the financial year 2004-2005. I'll probably cut my breeders in half, retire some debt and know we're going into a downward trend; make the money and run …

This comment highlights the two issues previously identified that graziers believe decide their future – the market and seasons. The third issue raised by *Bruce*, debt management is discussed later in this chapter. Planning requires the balancing of these major influences.

Business planning was the other type of plan mentioned. An example of this is from *Hugh*, a private grazier from the Central West:

> … we based a fairly good farm and business plan on what I've learnt through the DPI … Future Profit … gave us a sense of direction. We got a grip on where we're going and what we're doing. With cattle places, these dry times, yeah, they're a hard thing to go through, but it's not affecting us like it probably is affecting a lot of other people … we've sort of basically planning for these things all the time and we've got a fairly

> good reserve financially and we're just gradually getting on top of our stocking rates and things like that … we don't carry too many stock at any one time. It's still got to be enough there for us to make money out of, but in the really really good times we don't increase our sheep numbers or our cattle numbers, we stay where we are.

Hugh mentions the importance of government-sponsored training for his planning knowledge. The Australian government considered Property Management Planning to be an important tool in assisting farmers to manage the changes that took place in agriculture (Commonwealth of Australia 1995), and this is one of the types of training that FarmBis subsidises (Queensland Rural Adjustment Authority 2004). He also notes that this planning has made a difference to his business, compared with those of his neighbours. There is a sense of confidence underlying *Hugh*'s remarks that he feels better equipped, now that he has undertaken the training, to deal with the challenges that confront him. *Joan,* a private grazier in the Central West, provided insight into changes regarding planning:

> I think there's a lot more planning now than there used to be, and I guess that will continue to happen. Whereas once the planning used to be talking to Dad over breakfast about what we're going to do today and we probably should book the shearing for September, whereas now people work out timelines and set goals and … I guess it's more like a business or a corporate kind of body … I guess people have been forced to think that way too, everything's structured differently now, it's not just a chat over breakfast, you've really got to have a bit of a framework, a business plan, particularly if you're seeking finance … it's not just a handshake with the bank manager now, you've got to prove that you've got a viable business and you've got future goals and plans and budgets and things.

Joan raised two points of interest to this thesis. First, she contrasted the type of planning undertaken in the past with that of today, noting the fact that historically, planning on a property was informal and short-term, and today it is formal and long-term. A second point is that an incentive for producing a written plan is that financial institutions require it. This confirms the findings of a national study of farm business practices which found that the main reason people created plans was to meet lending institutions requirements (Tanewski, Romano & Smyrnois 2000).

Several other strategies mentioned had elements of planning. These were: having a long-term perspective; prioritising; and balancing costs and benefits. Some participants demonstrated a long-term perspective by mentioning the importance of past management of the land in conjunction with future management, with company managers being more likely than private graziers to demonstrate this. When participants spoke about using their time in ways that would help them make a living now versus make a difference to their future, these were coded

as ‘prioritising’, and private graziers were more likely than company managers to mention this. It was here that the dilemma of attending meetings to influence decisions that would affect them in the longer term versus attending to the immediate demands of running their business was raised. Private graziers were most likely to talk about prioritising. Balancing concerned balancing the costs and benefits of operational improvements, and balancing work and leisure.

Economies of scale

Many of the graziers in this study were aware of the benefits of scale achieved through property amalgamation through their personal experience. The majority of private graziers had purchased their property outright, with the balance having inherited the land with some then purchasing more to increase the size of the holding. Much of the discussion about economies of scale, mentioned more by Central West graziers than Gulf graziers, centred on the disadvantages of small properties or, conversely, the advantages of larger ones.

Increasing the size of landholdings to achieve economies of scale has been a popular and recommended strategy employed to remain viable (Barr & Cary 2000; MacLeod & McIvor 2003), and one encouraged by government because a larger property is more economically viable, through proportionally lowering input to output costs. The purpose of the Desert Uplands Build-up and Development Scheme was to provide financial support to people to increase the size of their holdings because of the recognition of the need for an adequate-sized property (Desert Uplands Build-up and Development Committee 1996). Some participants in the Central West location resided in the Desert Uplands. *David* and *Jane*, who were private graziers in the Central West, though not in the Desert Uplands, captured the key benefits of economies of scale in the following interchange:

> *David*: … a lot of smaller places are being bought up and amalgamated. They get what you call an economy of scale. See even the place we’ve got at the moment we could go and buy another, we could probably go and buy another thirty or forty thousand acres adjoining us and run it with the same overheads as what we’ve running our place for now.
>
> *Jane*: You’d have to carry that extra debt; extra financial pressure.
>
> *David*: Your running expenses; you wouldn’t need any more men.

The debt acquired through property amalgamation is a salient point, and is discussed under the strategy of financial management. However, this strategy has increased farmers’ debt (CIE 1997). Consequently this has reduced the capacity of businesses to employ staff, so some of

those who have increased their holdings have also increased their workload. Many participants – predominantly from the Gulf – spoke of high and escalating workloads.

Independently of the need for economies of scale because of structural change, claims have been made in the literature that many of the properties created under the closer settlement schemes were too small to make an adequate living at the time they were created (Higgins & Lockie 2001; Johnston 1982; Seabrook, McAlpine & Fensham 2006). This was confirmed by participants in this study. A lot of comment was made about the disadvantages of small properties and the advantages of a larger one, most often by private graziers and Central West graziers. Frequent association was made between a small property and over-grazing, as in *Bruce*'s comment:

> … if the places are too small they get raped and it'll take them longer to come back; they'll get raped in seasons like this where they won't come back, you get a couple of seasons like this say over a period of … you'll find that country might take another couple of generations to come back and a couple of generations of good seasons.

Many claims were made that the underlying cause of financial problems was that the properties were too small. The association made between small properties, financial difficulties and over-grazing is central to this thesis. This connection takes the focus from developing in a way that prevents environmental degradation and places it on the well-known association between poverty and environmental degradation. This is an issue taken up in Chapter 7.

Knowledge

The graziers in this study identified the need for a different skill set from that of the past. Consistent with their business focus, they identified that their greatest future need was for improved business skills, in order to build on their existing knowledge of land and stock management. They had acquired these largely through experience, but for some they came from mentoring. Some claimed that graziers lacked basic practical knowledge and skills such as mustering, and repairing and maintaining equipment, but others argued the need for more sophisticated skills such as the ability to negotiate in order to achieve win-win outcomes. *Matthew*'s comment about the changed skill set required echoed the views of many:

> ... years ago if you were a good stockman, you had a place in the industry, now it's playing second fiddle to the business manager in the big picture; if you haven't got your business in order your business isn't going to run anyway, so it won't matter if you're a good stockman … you're not going to end up with a bit of country anyway.

Participants believed that good business skills would be essential for the next generation of graziers. *Beth* and *Matthew*, who made the following comment, were thinking of others, but also their children who they hoped would follow in their footsteps:

> *Beth:* They're business management side will have to be really number one priority.
> *Matthew:* There won't be any big margin for error like we've had, like we've sort of got by with how we done it, and now the error margins are that fine.

These quotes identify two important points: first, that business skills are now considered very important to running a grazing operation successfully; and second, that many of the graziers I interviewed are in a transition generation. Private graziers were more likely than their counterparts to mention the need for business skills. I now expand on the second point because it highlights some tensions.

Although these graziers valued the knowledge of land and stock management, largely gained through experience, they recognised that it was inadequate to run a successful grazing enterprise in the twenty-first century. However, data reveal that there are some tensions in this shift towards a business culture in farming. Illustrative of this tension was a comment from *Margaret*, a company employee in the Central West, who predicted that tomorrow's grazier would be, '… a big fat office jockey'. Through this comment, *Margaret*, like other participants, demonstrated her low regard for office work. 'Office jockey' and 'shiny bum' are disdainful terms often used to describe cit y-based bureaucrats. The view was that office work produced few tangible outcomes and further that it was not the legitimate or 'real' work of graziers, a view consistent with Bryant's (1999a, p. xi) results. A second source of the tension was the belief that time spent in the office resulted in less time spent in the paddock, and therefore the loss to future generations of the high-quality stock management skills best obtained through experience. This is one of the main points made in the next quote. It was evident that while participants recognised the importance of office work, they continued to privilege outdoor work. As one posited in terms of the next generation of farmers, 'you can't learn about the country sitting at desks as far as I'm concerned' (*Tanya*).

Traditionally, it was through an informal education that graziers learnt the required knowledge and skills to carry on the family farm, and these continue to be highly valued skills. Perhaps unsurprisingly, it was older graziers who were more likely than others to reflect on learning from experience. The value of traditional learning is demonstrated by *Sharon*, a private grazier from the Gulf, as she talks about the making of a top grazier:

> … to be a grazier takes many years, to be a good cattle man, or a good sheep man … it's something that people learn from a very early age. You can take any person who's interested in stock at any age, and you teach them the basics of how to care for cattle, but you'll never teach them the instinctive feeling of knowing that cattle are perishing in a corner up there, or that they're liable to walk that river, or if you just put steers in that paddock, they're going to be restless. It's an instinctive thing that comes with many years of associating with the animals. And that's why it's almost impossible to turn out a top-class grazier that understands his cattle in a short training period … my grandchildren were mustering and riding when they were three and four and five years of age; they were seeing how cattle are yarded, how they're treated, what cattle are likely to do … that's why the grazing industry is short, possibly … like the real good, top, cattle men and sheep men are in the minority now. There's a lot of people running very successful operations but they're not necessarily what we call top stockmen. However, it's the learning process that used to take a long time and not many people have got that much time now.

Sharon raises an important point that was made by several graziers. The emerging business culture is fostering strong business management skills but this may be at the cost of other skills that have longer-term impacts. This sample represents graziers in transition because many have had to learn skills that for most of their life were not required and are still not valued, except for the outcomes they deliver. For most, their parents would have managed successfully with the current business skills required and their children will complete a tertiary education that will provide them with many of these skills.

Mentoring is another approach to learning that was mentioned. Although some participants said they provided mentoring to other farmers, most, like *David*, explained that they were beneficiaries of mentoring. He said:

> I've been very lucky … I've got a cousin who is very successful on the land. He became my mentor and I used to watch what he was doing … you can't buy that kind of thing.

Mentoring is recognised as an important tool in the adoption of change, and has been found to provide producers with the support and knowledge to run successful businesses and sustainable farming systems (England 2003).

Some graziers claimed that graziers as a group lacked knowledge. For some, such as *Bruce*, this was in the field of land management, given that, as he said, 'most of the management principles are based on European style management [and] … as a nation we have to have a different management approach'. For others, the most critical gaps were in relation to

financial management and basic farm skills. It was claimed that this resulted from a lack of research and was associated with the loss of extension services. The loss reflects the move from one-to-one extension to group processes which resulted from the shrinking public sector and the increased regulatory role of the two government departments (Department of Primary Industries and Fisheries and Department of Natural Resources and Water) that had provided extension services to this sector. Gulf participants reported not having received extension services much beyond the 1970s, and argued that very little research was now conducted with their involvement. This withdrawal of the state from extension was raised as an issue equally by all age groups and equally in both study locations. However, there was some difference in that those on smaller properties had a greater tendency to nominate this as a point of concern.

A strategy that has contributed to knowledge development was combining different types of knowledge – either several areas of practical knowledge or practical and specialist knowledge were combined. This was more likely to be mentioned by private graziers than company managers. This is illustrated by *Frank*'s description of what is now required of people like himself, a small family farmer: 'You just haven't got to be a good stockperson anymore you've got to be an accountant, you've got to be an economist, you've got to be an optimist'. His last phrase provided insight into the challenge this presents. Combining knowledge is about learning not just one aspect of the business, such as stock management, but about managing the multiple aspects of the business as a whole. These results confirm the findings from three national studies in Australia. Taylor (2003) found that producers and support staff identified that landholders needed a range of systems, social, business and bio-physical knowledge. Tanewski, Romano and Smyrnois (2000, p. 5) concluded that farmers needed to be 'managerially versatile', and named production, finance, legal and marketing as areas in which they needed knowledge and competency. Similarly, Synapse Consulting (1998) identified the need for farmers to have knowledge, skills and attributes in agricultural production, marketing and management.

Financial management

Financial management refers to managing debt, diversification and an off-farm income. Tanewski, Romano and Smyrnois (2000, p. 28) found that in Australia on average, those in the beef industry and sheep-beef combined had the highest equity of all industries at 85 percent. In the non-representative sample in this study only 56 percent (of private graziers) had 85 percent or more equity. Central West and private graziers were more likely than others

to mention issues of financial management. *Sandy*, a private grazier from the Central West, provided some insights into debt acquisition:

> In the ’80s people acquired debt, then the decreasing commodity prices and interest rates soared. A lot of people who got into debt then are still trying to get out. At the same time people were getting the message to get bigger or get out. There was more pressure then to go into debt than previously, because of the ‘get bigger’ idea.

Sandy’s comment picks up on a point made earlier about the financial impact of property amalgamation. Although it is a strategy that increases the economies of scale, and therefore contributes to the alleviation of the cost-price squeeze, funds need to be available to meet loan repayments.

Participants indicated that the current schemes for longer term investment for farmers helped manage debt but the current five-year averaging was inadequate to even out what one participant described as the ‘boom and bust’ cycle. This is consistent with Argent’s (2000, p. 61) claim that the restructuring of farm credit in the 1990s ‘failed to address many farm families’ demand for concessional, long-term finance’. Typically, debt is seen as a financial stress; however, Schwarzweller and Davidson (1997, cited in Rickson 1999, p. 273) found that it could be ‘a positive indicator of long-term planning horizons and confidence in a farm’s future on the part of farmers and lending agencies’. Comments about debt management were pervasive. They were made by similar proportions in all age groups and in both study locations. However, debt was most likely to be mentioned by private graziers and those on small properties.

Diversification is another approach to financial management. It was a strategy mentioned by many participants, but there were limited options for this both on and off-farm. The purpose of diversification is to minimise risk in a context of fluctuating commodity prices and climate, by providing a second source of income to help manage the uncertain financial situation this creates (Davidson & Griffin 2000). Lowe et al. (1993, p. 216) indicate that farm diversification was seen as the main solution to declining farm incomes in the 1980s; it continues to be considered a solution in the twenty-first century. Many private graziers talked about doing off-farm work to manage fluctuating commodity prices in the past, but increasingly to manage at all. A number of the men had worked off-farm using their graders to build roads, as farm hands or doing administrative work, and some of the women currently worked off-farm in administrative positions. Off-farm diversification included strategies such

as share trading, and commercial and residential property investment. *George*, a private grazier from the Central West, described how successful this had been for his family:

> … we went to the places underdeveloped; there was no water, 30,000 acres, not a fence or water on them. I put three permanent dams in, did fencing, the market dropped I went back into debt again, not heavily … and we said, well, if we get into that position we're not going to put it all back into the property … we started investing. In those days BHP and all these shares were way down the bottom … that is what made us … If we'd just keep putting money back into the place we would be in trouble today and … from that one little place we bought the two neighbouring places … for our son and … for our daughter … by diversifying …

The majority of study participants reported that at least 90 percent of their income was from the property. So, although investment was a successful strategy, it was not widely reported by either private graziers or company managers. Central West and private graziers were more likely than their counterparts to mention it.

On-farm diversification is another financial management strategy, but participants struggled to identify options beyond selling cattle live or to the meatworks, or running both cattle and sheep. Many suggested that cropping may occur in the future in the Gulf because of the ready water supply. There were significant barriers to on-farm diversification. These were identified as: the harsh climate, distance to markets for primary produce, the restriction of leasehold tenure to grazing and the distance to regional centres that may provide employment. *Frank*, from the Central West, believed that government was 'avoiding the big issues' by its approach to diversification:

> There's been a lot of talk about diversification through the DPI in this part of the world. And I think in a lot of cases those tactics aren't needed, because in a lot of cases … [they] are actually looking at, it is not just something on the sideline, it's a whole new business … so it's not diversification … and I think it's a desperation thing, you know … in most cases it's not going to work … it's just a really politically overall way of looking at things – diversification is the answer to all problems.

Diversification through vertical integration and supply chain management is increasingly popular in industry but to date occurs to a limited degree in the cattle industry compared with other industries. An exception is the Australian Agricultural Company's (AACo) 1824 retail outlets. These sell beef in meal-ready form that was born and bred on AACo properties, finished in an AACo feedlot and slaughtered in AACo owned meatworks (see www.aaco.com.au). This is a pastoral company that began operating in 1824, that has diversified through entering the retail market.

Private graziers were far more likely than company managers to talk about on or off-farm diversification. One participant encapsulated the increasing need for graziers to have an outside income, by stating that 'in rural Australia … the only viable graziers are those married to nurses and school teachers'. The importance of off-farm income, particularly for small family farmers was identified by Cary et al. (2001).

The land: An asset or a means to an end?

Study participants saw the land as their primary asset, and understood that it needed to be cared for; however, at times this was compromised by over-grazing. Study participants were aware that they needed to manage their land for its long-term productivity; their challenge was to balance this with their economic and social needs.

Caring for the land

One of the most central reasons participants gave for caring for the land was what many described as 'for the kids'. Indicative of this are the following comments from *Joan*, a private grazier from the Central West:

> … trying to put into place some sort of guidelines to ensure that there'll be a good clean river, soil, air for our future generations, even if they're not necessarily our own personal future generations; whoever's here. I guess the … medical question – do no harm.

A second reason for caring for the land given by participants revolved around business goals. *Roger*, a company manager elaborated on this position:

> I think on today's market in the region, this property would be worth probably $12 to $15 million, right and we've probably got about $7million worth of cattle on it, so what am I supposed to manage? The land, that's the biggest capital investment the company's given me to look after, isn't it? If you don't manage your land correctly your cattle won't be there.

Regardless of whether their rationale was personal or business, participants noted that today there was far more information available about land degradation and the long-term negative impacts of unsustainable farming practices. As *Patricia*, from the Central West, contended: 'I think that probably there's more people now aware of the land and the environment and they know they can't keep doing what they're doing'. This finding for increased environmental awareness is consistent with other research conducted in the rangelands (Taylor 2003) and the northern Gulf (Kraatz et al. 2006). It was young women who were most likely to speak about caring for the land 'for the kids'.

As well as indicating *why* they cared for the land, participants also said *how* they cared for the land. In terms of the latter, a number argued for the need to take a long-term perspective and conduct long-term monitoring. *Christine*, a private grazier from the Central West, characterised this position:

> If I look back over the past 20 or 30 years, and what I can tell you is that we are absolutely convinced that even though we are in the very dry season now, our country is in better condition than it was 40 years ago … when I first came out here 40 years ago, we had a lot of places alongside the creek that were just bare claypan, even in a good season. There isn't much of that left any more.

This finding confirms Gamble, Blunden and Ramsay's (2003) survey results of South Australian and Queensland farmers, which found that leaving natural resources in a better state than when they took over the farm was rated very highly. *Roger*, a company manager commented on the benefits of monitoring pasture, using photography:

> … if you can have photos of this property in the '60s and '70s then photos now … you can start picking up the story can't you, whether it is grazing or weather patterns …

Older participants and private graziers were most likely to mention taking a long-term perspective, and younger participants and company managers to talk about monitoring.

Grazing to the country's capacity which includes not over-grazing, and pasture management were the two most frequently mentioned ways reported to care for the land, with the data showing that private graziers are more likely than company managers to emphasise the importance of not over-grazing. This involved knowing the country and its capacity. *Elizabeth*, from the Central West, points out how successful this strategy can be:

> … there's some landholders here that have made a lot of money because they've worked their land to what their land was capable of … you can't take more out of it than it's got to give. You've got to learn to work with it and those people have done well.

This statement implies this is a strategy that fruitfully combined the goals of production and the protection of the environment. It is a method consistent with the concept of Landcare farming which is described as 'an approach that is more compatible with land use capability' (Cullen, Williams & Curtis 2003, p. 1). Gamble, Blunden and Ramsay (2003) found in a sample of South Australian and Queensland farmers that they rated farming according to the land's capacity very highly. A well-known approach to pasture management is rotational

grazing. *Shane* described how this practice benefited the environment and increased production:

> … every year you'd spell a piece of country and you'd go back and say Christ, jeez this country's good, why can't we do it more … there's more focus on it … spell more country, if you weigh it up, work out the kilos you've got now, and the kilos by decreasing cattle on country, when they balance up again, like you got now, its alright.

Rotational grazing was known in the past as spelling country, which is the long-established practice of keeping stock out of a paddock for a period of time and a well-recognised pasture management tool (Ash & Stafford Smith 2003). The primary benefit of rotational grazing is pasture recovery and increased diversity of natural pastures, and therefore greater resilience. When this is combined with lighter stocking rates, the outcome is higher weight-for-age cattle, as *Shane* described. As cattle are sold on a cents per kilo basis, this means that, at least in theory, there is an increased income. The level of comment suggests pasture management and not over-grazing were more of a concern for Central West graziers than those in the Gulf.

Over-grazing

The current cost-price squeeze, combined with land administration policy, creates challenges for implementing ideal land management practices. The following section shows how these graziers are dealing with these challenges.

Over-grazing causes land degradation, which reduces ecological diversity and increases salinity, erosion and weed infestation. It causes both short and long-term decline in production and profitability, off-site environmental and economic impacts, and loss of natural and cultural values (Gretton & Salma 1996; Woodhill 1999). The level and degree of degradation are influenced by the soil type, rainfall, climate and vegetation type. Over-grazing is a term that is difficult to define, and a practice that is a challenge to measure. During the exploratory studies when I asked people to define over-grazing the diversity of views led me to conclude that there is a continuum of over-grazing (from occasional to continual) rather than some definitive quantitative measure. In this study, over-grazing refers to grazing too many head of stock for the capacity of the land.

In much of Australia broadscale tree clearing has been responsible for biodiversity loss and increasing salinity risk. In the tropical savannas, which are lightly wooded grasslands, tree clearing rarely occurs because the land is not sufficiently productive for clearing to be cost effective. Therefore, in the tropical savannas, over-grazing is the most likely avenue to

environmental degradation. Much of the Central West location comprises of Mitchell Grass downs, where of course no trees grow. As previously reported, some tree clearing has occurred in the Desert Uplands in the Central West, because of the productivity gains that occur when the trees were replaced with pasture. In the short term, the productivity gains are significant (Stafford Smith, Morton & Ash 1997).

The predominant reason that study participants reported for over-grazing was financial. This confirms Lawrence, Jordan and Lawley's (1997) findings from a study of south-west Queensland woolgrowers. There were several different financial reasons, but the main ones were in order to keep up with the expenses or as an active business management strategy. The common pathway to over-grazing, to keep up with expenses was described by *Luke*, a company manager from the Gulf. He suggested that people generally 'drift' into over-grazing because 'they probably carried over their numbers and thought, "No, it'll be right … we've had two or three really good years and early wet seasons"'. So, although they do it knowingly, typically it is unplanned and done to keep up with expenses. The nature of these expenses is illustrated by *David*'s story about his reasons:

> … we've got a property it's 60,000 acres and we run 25,000 sheep, sometimes we run 30,000 to try and make enough money to support ourselves especially when prices are down, to do our improvements, to pay for our kid's education.

It is noteworthy that other research has found paying for children's education has a high priority (Alston & Kent 2006; Haslam McKenzie 2000; Lawrence et al. 1994).

In contrast with keeping up with expenses, over-grazing as an active business strategy is the other main financial reason given for the practice. This is highlighted by a remark made by *Tanya* about a neighbour:

> … he keeps saying the more cattle you've got, the more weaners you've got, the more you can sell and the more money you'll get. He doesn't care about the actual land, that's secondary to the actual money part of it …

Other financial reasons for over-grazing were because of debt, which can be the result of property amalgamation, having a small property or simply being a poor financial manager. *Tim* commented on how debt can lead to over-grazing:

> … because the people that are struggling will be not wanting to sell stock … when it's getting dry, because they badly need to pay off their bank loan and they're going to hang on for that couple more months in case it rains, because they badly need those sheep or those cattle … they lack the flexibility to make the right decisions, because they're tied into debts.

Many participants believed that having a small property was likely to lead to over-grazing. This is consistent with Lawrence, Jordan and Lawley's (1997, p. iii) finding in a study of south-west Queensland woolgrowers, where a small property encouraged higher stocking rates and almost half of the study participants believed their property was too small. It equally supports the findings of Barr and Cary's (2000) study that reported some rangelands properties were too small to allow grazing strategies that would sustain the required volume of pasture.

The size of many properties was determined through past 'closer settlement schemes' where sections of large leased properties were resumed and subdivided. *David* commented on subdivision for closer settlement:

> … Bonus Downs … 200,000 acres of pretty rough country … and they cut it up into five properties … so they virtually went from it being a nice viable place running 30,000 wethers to six unviable places … up to a point they flogged the hell out of it to try and make a living.

As stated in Chapter 3, over-grazing came up early during data collection as a complex and sensitive topic. Although there was no reluctance to discuss the topic, most participants spoke generally and few discussed their own practices.

It is apparent that some over-grazing occurs. In contrast to the environmental claim that over-grazing should not occur (Stafford Smith, Morton & Ash 1997), some of the graziers in this study considered that occasional over-grazing was acceptable as a short-term measure. This is consistent with the outcomes of Lawrence, Graham and Clark's (1994) study. A view held in the current study that 'land comes back' in a good season, and these graziers intend to be there in the long-term. It is in the context of this long-term perspective that occasional over-grazing is considered acceptable. Consistent with this, self-exploitation is also acceptable, to meet their goal of continuing their way of life in the longer term. This refers to reducing expenditure on personal and household needs, or tightening their belt, as a way of coping with financial difficulties in the short term, rather than disposing of the farm (Gray & Lawrence 2001). Lawrence, Graham and Clark (1994) found that woolgrowers made similar personal sacrifices, in order to stay. Remaining on the land is the major motivating factor for many producers, leading many of them to adopt behaviour that does not appear 'rational' in terms of environmental protection, but is viewed as being rational for short and longer-term survival.

A picture of financially driven behaviour is building about how graziers in this study operate their enterprise, especially the private graziers. Over-grazing occurs for financial reasons – usually to meet expenses. A significant expense for many in this study was meeting loan repayments, and often this would have been a result of purchasing more land to achieve economies of scale. Added to this for Central West graziers is drought, and for all participants the reliance on volatile international market were relevant.

Weeds and animal pests

The threat of weeds was of greater concern than the current level of weeds, and wild dogs, dingos and pigs were the animal pests of greatest concern. Consistent with other findings (Dale & Bellamy 1998; Roberts et al. 1998; Stewart 1996), study participants reported that weeds were not controlled. In a Victorian study identifying current issues for landholders, more than 50 percent of the sample identified weeds and animal pests as an issue (Cocklin, Dibden & Mautner 2003, p. 12). Study participants reported that weeds were not controlled because of the high costs of weed management, the rapid spread of weeds and the low level of government support for weed control. *Roger*, a company manager from the Gulf, commented on all of these issues as he responded to a question about weed management:

> … this property [would have cost] $15,000 in ’92 to clear it [of weeds] and eradicate it and no one did anything because it was too much … now it’s $100,000 a year for three years to get it back under control … it is a lot of money, but you cut grazing back and up your running costs … by letting it grow.

Glenn, a company manager from the Central West, spoke about the difficulties of weed management.

> … it’s hard work, trying to eradicate it; it gets very expensive and I think the sheer amount of it, it suddenly appeared very rapidly, it’s overwhelming to a lot of people, it’s just frightening; they don’t know how to start …

Claims were made that the typical government response was to develop a plan, when on-ground action was required. It was believed that a planned group approach was required to address the nature of weed invasion. Although some study participants felt weeds were already out of control, most thought the threat was greater than the current problem.

The animal pests of greatest concern to study participants were dingos and wild dogs in the Central West and feral pigs in the Gulf, with study participants reporting that these animals were ineffectively controlled. Dingos and wild dogs are a problem because they hunt and kill

sheep and young cattle, which has a significant cost (Rural Management Partners 2004) and feral pigs dirty stock water from wallowing in it and are potential carriers of exotic disease (DNRMW 2006). Participants reported a lack of government support for animal pest control, which is consistent with a finding that government covered 30 percent of the costs of wild dog control in 2000-01 (Rural Management Partners 2004, p. 7). *Elizabeth* captured the many aspects of the problem of wild dogs with a history of the Blackall area:

> Originally a lot of the properties were fully fenced with dog netting … so the dogs … couldn't get over the top … the fences started to get in disrepair a bit; the expense and maintenance, they couldn't keep up with it. So they got together … out of necessity … all those better sheep stations … [in] the '60s … they shot dogs, paid bounties and trapped … the Rural Land's Protection Board were actually giving some money … that's when the 1080 came out. Then it changed … everybody thought it was going to be the big answer, you know we'll put 1080 out and that'll clean up the dogs and the problem will be gone. So in actual fact people got a little bit slack. They didn't bait, they didn't worry about shooting so much, and they let the fences get in a worse condition. So 1080 didn't work as well … because everybody didn't want to use it; working dogs and time and paying employees and the fact that it was a chemical. Quite a lot didn't want to know about it and because … there were no more doggers being paid … not nearly as many jackaroos around to be doing the shooting to get the bounty … it got worse and worse till now basically its unbearable and we couldn't handle it so government stepped in.

This history shows a varying level of government involvement in attempting to control dingos and wild dogs. The management strategies have changed over time. The problem however has remained, and notably the approaches that required group effort have failed.

There is a resurgence in the use of dogs for mustering instead of employing casual staff, because of the cost-price squeeze, so these owners were reluctant to use bait. One study participant had lost a house dog from bait just prior to my visit. Baiting is most effective (like weed control) if all the properties in the area are part of a baiting program (Rural Management Partners 2004), which does not always occur.

The government was perceived to have failed to control pests (weeds or animals) in national parks. A number of study participants bordered a national park and the lack of attention given to these issues by government in national parks has created a breeding ground. Participants indicated that group action was required for the management of both weeds and animals pests, which is consistent with Barr and Cary's (1992) claim that the control of weeds and animal pests is a community task rather than an individual one.

The livestock: Product development

For graziers, livestock is the product that they sell, so their focus was on maximising the return. When study participants mentioned stock it, was typically in the context of breeding, feeding and management strategies with the goal of producing cattle that brought adequate financial returns. *Matthew*, from the Gulf, stated: '… we brought our cattle from the bottom to where they are now, as far as quality … it's been one of our biggest objects …' The herd was improved through selective breeding, and represented many years of careful selection. The goal was to have heavier stock because cattle sold to meatworks and sold live are priced on weight. It is not unusual for people to spend their whole life improving their herd, which is why destocking during a drought can be such a difficult task.

Supplementary feeding occurred because of chemical deficiencies in the soil, to prevent disease, to enable stock to digest dry, low-nutrient grass and for survival or maintenance. An important strategy for managing cattle was 'educating' them, which began early in their lives, and occurred through repeated mustering and yarding. Most breeds become quieter with handling. With quieter cattle less labour is required and there is less bruising on the meat (caused by rough handling). Bruised meat attracts a lower price. *Chris*, a company manager from the Gulf, discussed the benefits of quiet cattle:

> … wild cattle no one wants really … for the profitability of the station … quiet and truckable cattle are much easier to work and you need fewer people to work them … so it pays. It pays the grazier to have quiet cattle for his own sake.

Towards this end, some participants had stopped using dogs and whips when mustering cattle. Helicopters were used extensively in the Gulf and, despite the high hire costs, they are time efficient. I observed helicopter mustering practices that promoted the quiet handling of stock and the opposite. Trap mustering has gained popularity because of its time efficiency, as already described, and the low impact on stock.

Stock were routinely monitored for disease. Treating stock for disease was usually done by inoculation, so it was expensive – particularly in the Gulf because of the large herd sizes. Consequently, tick-resistant herds were highly valued.

Conclusion

This chapter shows how a sample of graziers from a case study in two locations, the Central West and the Gulf, operated their enterprises to achieve their goal of economic viability. They wanted to develop their properties in a way that would increase their income and to reduce their input costs by becoming more efficient. An important overall strategy was planning. Continuing to have a property of sufficient size over time was important; economies of scale, an efficiency measure, can be acquired with a sufficiently large property, but this brings with it a debt to be managed and a higher workload. Diversification, though topical, was generally not achievable on-farm, largely because of the comparatively remote locations and limited alternatives. The success stories were from those who made investments off-farm, with off-farm work assisting survival. There was recognition that the highly valued land and stock management skills needed the addition of business management skills for a successful future.

Participants demonstrated an understanding that environmental sustainability is of fundamental importance, and revealed a knowledge of how this could be achieved. Grazing to the land's capacity and pasture management combined with taking a long-term approach were strategies aimed at promoting environmental sustainability. Participants indicated that over-grazing occurs primarily for financial reasons. For some graziers it is a solution to keeping up with expenses, while for others it is measured approach designed to increase short-term gain. Having a small property and having a debt contribute to the financial pressures that can lead to over-grazing. Livestock, the saleable product of their work, were bred, fed and managed to maximise their return.

Central West graziers were more likely than Gulf graziers to talk about planning, economies of scale, the disadvantages of small properties, the need for financial management and the practice of investment, and caring for the land. The Central West graziers were more focused on enterprise management than the Gulf graziers. Private graziers were more likely than company managers to mention the need for economic viability and the business strategies they used to achieve this. Where they differentiated most was with private graziers being more likely to comment on developing the property, the disadvantages of small properties, the strategy of prioritising, the need for financial management including managing debt, combining different types of knowledge, the need for business skills, doing off-farm work and, in terms of caring for their land, having a long-term perspective and the importance of

not over-grazing. By contrast, company managers were more likely to talk about having a long-term business perspective and pasture monitoring.

The results of this chapter and the preceding results chapters are discussed in Chapter 7. This occurs in the context of the aim of the study, which was to understand graziers' perceptions of sustainable development.

Chapter 7: Discussion

Introduction

The first section of this chapter outlines the study location and grazier-type (private, company) differences previously reported in each results chapter. In most respects the perspectives of the graziers are shared, but summarising the few differences here assists with understanding how sustainable development is interpreted by this sample. The next section discusses what these graziers have identified as key factors involved in sustainable development; these are social, economic and environmental issues that promote or hinder their ability to meet their needs now or their children's ability to meet theirs (after WCED 1987, p. 8). These key factors are economic viability, and marginalisation and security of tenure. To introduce this discussion, I describe the needs the graziers have identified. As reported in Chapter 2, how 'needs' are defined in the sustainable development literature is a contested area; however, a discussion of this is both beyond the scope of this thesis and not central to the aim of the thesis. How graziers interpret sustainable development leads into the final section of the chapter, which considers what the implications are for this interpretation of sustainable development.

Case study location and grazier-type differences

When elements of the grazing way of life are considered, a higher proportion of Central West graziers talked about the hardships and choosing to go there, compared with the Gulf graziers. By contrast, a higher proportion of Gulf graziers talked about the lifestyle element than those in the Central West. The combined impacts of distance and climate were an issue for Gulf graziers, whereas being season-dependent was the issue for Central West graziers. Considering the greater distances in the Gulf and drought in the Central West, these differences are not surprising. While Central West graziers noted that there were fewer services now, the Gulf graziers raised concerns about infrastructure (roads, telecommunications, power). When study participants spoke about the challenges of government processes and perceived priorities, a higher proportion of Gulf graziers raised concerns compared with Central West graziers. The priorities of concern were Aboriginal land rights, and when Aboriginal land rights and environmental interests were combined. When the differences with enterprise management were considered, a greater proportion of Central West graziers spoke about this topic than Gulf graziers. In particular the Central West

graziers commented on: economic viability; providing opportunities for their children; business planning; financial management and investment; economies of scale; the disadvantages of small properties; and grazing to the country's capacity.

Although some of these differences are not surprising, this broad comparison does provide insights into how sustainable development is interpreted. No firm conclusions can be drawn because of the methodology used, but it appears that economic viability may present a greater challenge for Central West than Gulf graziers. This is indicated by the Central West graziers mentioning hardships, economic viability and having a strong business focus which is a contrast to Gulf graziers who talked about lifestyle, climate and distance, infrastructure issues, government processes, and taking issue with perceived government priorities. Another interpretation of these contrasts is that the Gulf graziers' concerns lie with the possible future impacts of how they see themselves being governed, while the Central West graziers are focused more on the present. This explanation would be consistent with the view that, in general terms, the Gulf location is on more marginal pastoral land than the Central West, and it is the more marginal land that some commentators are recommending should be taken out of use for livestock production (Holmes 2006; Stafford Smith, Morton & Ash 2000).

When private graziers and company managers are compared, proportionally more private graziers than company managers comment on most topics. It is interesting to note that, while proportionally more private graziers talk about agrarian fundamentalism and passion, proportionally more company managers talk about the rural idyll and wanting to stay. This suggests that, while the company managers enjoy the way of life, for the private graziers it has a more profound value. While the company managers noted there were fewer services now and that telecommunications services were sub-standard, the private graziers talked about being market-dependent, the loss of services, and in particular the loss of extension services. This comparison highlights a major difference between the two types of graziers: the company managers are wage earners while the private graziers operate their own businesses. Although the company managers would need to meet performance requirements for continued employment, the business responsibilities are shared within the company. For the private graziers, the continuance of their business is a direct result of their ability to manage their enterprise successfully. These differences are reflected in a higher proportion of private graziers than company managers mentioning the following: economic viability; opportunities for the children; development; disadvantages of small properties; prioritising; financial

management and financial investment; debt management, and off-farm work specifically; combing different types of knowledge; and the need for business skills. By comparison, the only enterprise management concept mentioned by proportionally more company managers than private graziers was having a long-term business perspective. The differences between the two grazier-types in terms of land management was that proportionally more private graziers mentioned taking a long-term perspective and not over-grazing, while proportionally more company managers mentioned pasture monitoring. It is interesting to note that knowledge was not an issue of as much significance for company managers as it was for private graziers. This may be because of the on-going training company managers receive. A second area where proportionally more private graziers raised issues compared with company managers was with government processes and perceived government priorities. The issues raised were: government processes, and specifically consultation processes and being ruled; Aboriginal land rights; Aboriginal land rights and environmental interests combined; decreasing security of tenure; and development constraints. These differences reflect the more direct impact of government policy on private graziers when compared with company managers.

This summary highlights where the differences lie between the study locations and between the private graziers and company managers. Although the differences are few, this summary provides a background for understanding how graziers interpret sustainable development.

How graziers interpret sustainable development: Key factors

In summary, study participants have indicated that they need to remain economically viable to continue their preferred way of life. This requires them to run their operation as a business, manage their land for the longer term and produce livestock of marketable quality. This indicates that their priority is to continue their preferred way of life, but they recognise the existence of a range of influences on their ability to achieve this.

Being able to enjoy their preferred way of life is inherently rewarding for graziers in this study. Many choose to go there, and despite the hardships, they choose to stay. For some, it is the realisation of a dream. They have a passion for the bush and appreciate the beauty of the landscape and the open spaces. There is the opportunity to raise their children in an environment they consider ideal. The work provides them with both challenges and satisfaction. They enjoy their desired standard of living and the supportive relationships they

experience. The independence of their way of life is highly valued, and many believe that farming and farmers are inherently important to the nation.

In the next section the key factors that graziers identify as involved in sustainable development are discussed. There are two key factors, one economic and one social. Economic viability is considered to be of fundamental importance to their immediate and long-term future. The social factor, which is marginalisation and security of tenure, is a future threat.

Economic viability

An immediate threat to continuing this way of life is becoming economically unviable which would ultimately require them to leave the land. But there are perceived threats too, resulting from the changing values about rural land use which are discussed later in the chapter. This need for economic viability sits within a broader context. As discussed in Chapter 2, the cost-price squeeze in agriculture which commenced in the 1950s (Lawrence 1987, p. 28) was exacerbated by deregulation which commenced in the 1970s (Tonts & Jones 1996, p. 140). The now deregulated agricultural sector and the prediction that the cost-price squeeze will continue (DAFF 2005) suggests that this strong focus on economic viability is appropriate.

In this study, graziers have indicated that the financial viability of a grazing operation has several dimensions but being market and season-dependent was identified as the most important influence. These challenges to financial viability were underlaid by costs resulting from the constraints of distance and reliance on sub-standard and poorly maintained infrastructure. Graziers attempt to balance these barriers to economic viability through running their operation as a business and managing their land for the longer term.

Market and season dependence

The most significant barrier study participants identified was when poor seasons coincided with low commodity prices. Beef graziers in Australia have a long history of dependence on international markets, as they constitute one of the few industries which has never had a statutory marketing scheme[14] to guarantee minimum prices and a market for the product. Dependence on volatile international markets (Wright & Kaine 1997) and variable seasons results in highly variable annual incomes (Barr 2000; Barr, Karunaratne & Wilkinson 2005).

[14] Most primary industries had such schemes in the past, but none now remain.

In this study, being season-dependent is primarily a reference to drought in the Central West. This area experiences extended droughts (that is, over a period of several years), such as in the 1990s. Extended drought requires destocking. In this study, 85 percent of the private graziers (who provided this information) received at least 90 percent of their total income from the property. For them, destocking meant they had no source of income from the property until they restocked after the drought. Although drought is a normal climate event (Lindesay 2003), the potential financial impact at a national scale is provided by the estimate that the 2002-03 drought reduced the rate of economic growth by 1 percent (DAFF 2004, p. 1).

Location costs

There are indirect costs that are born by graziers, largely because of their location. The distance of these properties from markets and regional centres results in high freight costs, and a reliance on what study participants have described as poorly maintained roads and sub-standard telecommunications services, creates further expense. An example given was the costs resulting from road train accidents because of poorly maintained roads. There is lost income from livestock deaths, potentially higher future insurance premiums, lost income for the livestock carrier which can be passed on in higher service charges, and risk of injury to drivers, which has the potential to result in increased insurance premiums and difficulty attracting staff. Complaints about the poor quality of the roads are consistent with a government report which acknowledged that most road transport infrastructure reforms are yet to occur (Productivity Commission 1999a). A sub-standard telecommunication service was reported to result in difficulty conducting everyday business; a consequence was that more time was required to do this work. This was a direct barrier to increasing efficiency, which was one of the strategies employed to run the operation as a business. The cost of computer equipment, raised indirectly in this study, is well known (Bellamy, Mayocchi & Leitch 2002; Bryant 1999a; Grace, Lundin & Daws 1996) but not an issue that *Networking the Nation* addressed, despite the goal of this policy being to increase access and particularly to reduce disparities in access (DCITA 2008).

Enterprise management

The study participants endeavour to run their operation as a business to counter the negative financial impacts from volatile markets, variable seasons and sub-standard infrastructure, all of which are beyond their control, and to make enough money to continue operating. The two

main dimensions of enterprise management are business and land management strategies, which are discussed in turn.

At the property level, graziers seek to increase production while reducing input costs. This occurs through developing the property, increased efficiencies, planning, economies of scale, financial management and knowledge. Developing the property, which occurs mainly through increasing the number of watering points and increasing fencing, allows increased productivity through increasing the carrying capacity of the land. Efficiency is increased by reducing input costs through strategies as trap mustering. This significantly reduces time and labour costs. Efficiencies are also achieved through the economies of scale obtained through property amalgamation. The primary disadvantage of this is increasing debt and workload; and high and increasing workload were raised as issues in this study. Those who do not or cannot increase the size of their holdings may be left with a small property, and graziers in this study associated small properties with over-grazing and financial problems, which introduces the strategy of financial management. Just 43 percent of the properties of private graziers (where this information was provided) had 80 percent or more equity. Total rural debt and the amount of debt per borrower in Queensland increased between 2003 and 2005 and the increase in debt was one and a half times greater than the gross value of production between 1994 and 2005 (Moore Stephens 2005, pp. 4, 19). This ratio suggests that managing the debt could be difficult. In addition, there are limited opportunities for on-farm diversification to assist with financial management, regardless of the property size, because of the distances from market, harsh climate and the leasehold conditions which restrict land use mainly to grazing. Equally, the opportunities for off-farm income are limited because of distances from towns which may offer employment.

Study participants indicated that they now need business management knowledge and skills in addition to their existing stock and land management skills to enable them to continue being financially viable. This reflects the more complex nature of farming, particularly the range of skills and knowledge required and the balancing of the economic and environmental dimensions. Several earlier studies concluded that one of the skills now required of farmers is business management (Ash & Stafford Smith 2003; Kemp et al. 2004; Kingwell 2002; Tanewski, Romano & Smyrnois 2000). The identification of the increasing complexity of farming resulted in the creation of the FarmBis program to fund training in farm business management (McColl, Donald & Shearer 1997). The National Property Management

Planning (PMP) campaign was introduced in 1992 to ‘encourage producers to develop their farm management skills’ to integrate economic and environmental management, in an ongoing way, with funding support provided through FarmBis (Commonwealth of Australia 1995, p. 16). The goal of PMP was to manage a complex set of factors within a strategic framework, and a review found that in Queensland the positive outcomes of the program were improved business skills, changing the way people and families interacted and planned, changes to their approach to natural resource management and biodiversity conservation, and increased participation in strategic learning activities (Cock 2001).

Although some identified a need for greater biophysical knowledge, many believe that business management knowledge and skills will be the most important set of skills for future graziers; however, concern was expressed that this may mean a loss of land and stock management knowledge. The need for greater biophysical knowledge identified by some participants confirmed knowledge needs previously identified. For example, Roberts et al. (1998) report that their sample of tropical savannas graziers needed more information on land use capability and more general information about the landscape. Taylor’s (2003) national study of the future knowledge needs and personal qualities of primary producers in the rangelands reported that a diverse range of knowledge was considered necessary. This included: business; natural resource management; production; interpersonal and human resource management; marketing; planning; the legislative and policy environment; and the broader influences on change.

Many of the business strategies reported in this study are consistent with recommended approaches (Ash & Stafford Smith 2003; Cock 2001; Commonwealth of Australia 1995; Kemp et al. 2004; McColl, Donald & Shearer 1997; Mullen 2002), and reflect those used by others (Bryant 1999b; Coldwell 2007; Johnsen 1999). Halpin and Guilfoyle (2004) reported that farmers were encouraged to be self-reliant and entrepreneurial and to conceptualise the farm as a business. This required them to develop entrepreneurial or at least increased business management abilities. Farming was expected to be a business, not a lifestyle (Higgins & Lockie 2001). Bryant (1999b, p. 253) interpreted this approach as ‘institutional shaping’ through policies that promoted ‘managerial skill, improved productivity and self-reliance’. This study suggests that this sample, like others, has responded to this policy direction. However, the context within which graziers operate suggest there are financial challenges despite this approach. This sample of graziers has indicated that they are

attempting to be financially independent of government through increased productivity and efficiency, which was the goal of deregulation (Higgins & Lockie 2001). This more corporate focus reflects an international and national change (Tonts & Black 2002).

Graziers believed that appropriate land management practices promoted their longer term economic viability and considered this to be a part of overall enterprise management. Appropriate land management occurred through effective pasture management, often described in this study as grazing to the country's capacity. This strategy is appropriate because much of the tropical savannas area is lightly wooded with livestock reliant on native grasslands (Lesslie et al. 2006) and the preventative approach is appropriate because the low productive value means it is less feasible to invest in restoration should damage occur (Stafford Smith, Morton & Ash 2000). Grazing to the country's capacity is consistent with recommended practices for the Australian rangelands, such as light stocking rates, adjusted in response to available forage, and restocking after drought when key species are re-established (Ash & Stafford Smith 2003; Stafford Smith, Morton & Ash 2000). As in this study, previous research has found that pasture management is a priority for land management. Pasture management was considered the 'lynchpin of a successful grazing operation' by Northern Gulf graziers (Kraatz et al. 2006, p. 8), and a practice rated as very or extremely important in a sample of South Australian (62 percent) and Queensland (88 percent) graziers, who were asked to rank their natural resource values and guiding principles (Gamble, Blunden & Ramsay 2003, p. 6). It is also consistent with Roberts et al.' s (1998, p. 20) finding that best practice for the tropical savannas was 'management of stock, pasture management, dry season management, fences and water'. The graziers in this study demonstrated that they understood how to care appropriately for their land, and voiced their desire to do so. They were also aware of rising community expectations that they do so, which confirms earlier research (Coldwell 2007; Dibden, Mautner & Cocklin 2005; MacLeod & McIvor 2003).

Nevertheless, occasional over-grazing was considered acceptable by some, to meet short-term financial needs in order to ensure longer term residency. The main reason given for over-grazing was financial: to keep up with expenses. Usually it was unplanned, and people drifted into it by failing to reduce stock numbers quickly enough as they moved into a dry period. A key is that people knew when they were over-grazing. Some graziers are known to deliberately overstock and take advantage of the known short-term financial benefits that

result from this practice (Stafford Smith, Morton & Ash 2000). In this study having a small property was associated with over-grazing.

If a level of over-grazing is occurring, as reported in this study, this is consistent with earlier research. Lawrence, Jordan and Lawley (1997) reported that over-grazing occurred in south-west Queensland through overstocking, Stafford Smith, Morton and Ash (1997) that higher stocking rates exist in the rangelands than long-term sustainability suggests are appropriate, and Tothill and Gillies' (1992, p. 5) found 'widespread deterioration in most pasture communities in Queensland' which they believe results largely from over-grazing. In the current study, there was a belief that country would 'come back' after it had been over-grazed, which is consistent with Tothill and Gillies' (1992) observation that the land which had deteriorated could be returned to full productivity through changed land management practices. However, a recent study which reported on 'seven major degradation episodes' in Australia over the last century in grazed rangelands found that the time frames for observing environmental changes on which sound environmental management decisions could be based were beyond the working life of one manager (Stafford Smith et al. 2007, p. 20690). This raises questions about the ability of the current generation of graziers to make environmental decisions that are sound in the longer term.

The challenge of maintaining economic viability for graziers in this study shows that the factors they consider to be the greatest threat are beyond their control – markets and seasons. This is a more immediate challenge for private graziers than company managers and appears to be more of a challenge for Central West and Gulf graziers. The graziers seek to meet this challenge by taking a business approach to managing their grazing operation, but they have identified that distance, infrastructure, capacity to expand and tenure operate as restraints. The strong business focus is more apparent with private graziers and Central West graziers than their counterparts. Although they appear to have taken up the enterprise management approach with enthusiasm in order to achieve financial independence, and continue to be competitive on international markets, this study shows that the pursuit of increased productivity may have unintended consequences. When their short-term viability is threatened, some borrow from their children's future by over-grazing.

The other key factor that graziers identified as influencing their ability to meet their needs and their children's ability to meet theirs – marginalisation and security of tenure is discussed

next. These are external and indirect influences which contrast with the direct and more immediate impact of commodity price slumps and drought. Gulf graziers and private graziers were more likely than others to raise the external and indirect issues.

Marginalisation and security of tenure

Study participants identified two areas where they felt their worth had decreased and they had become insignificant. The first was in government consultation processes where they felt they and their agendas had become marginalised. The second was a result of the changing values of rural land use where government was perceived to be prioritising environmental interests and Aboriginal land rights over their production interests. These perceptions resulted in part from how consultations were conducted. The study participants perceived that this marginalisation ultimately threatened the security of their tenure. Therefore the goal of continuing their preferred way of life was seen to be at risk.

Study participants perceived that the conduct of government consultations was marginalising them due to the way these meetings were conducted and from the outcomes of the process. Typically, the consultation events were arranged with little notice or discussion of suitable times for the graziers who were one of the stakeholder groups. This approach will automatically exclude some graziers because of their busy work program, especially during the cooler winter months, and because some of their main tasks require continued attendance for a period of weeks, or involve the use of contractors for whom bookings are made months in advance.

Time constraints existed for these graziers because of the cost-price squeeze, and distance constraints also existed because of their comparatively remote locations. However, consultation events typically occurred in regional centres rather than closer to the communities in which the graziers lived. This made distance a greater constraint because it increased the time required for attendance and the costs of attendance. The regional centre location was more convenient for those heralding non-production values, which in this study were those representing environmental and Aboriginal land rights issues. In addition to the ease of access to regional centres for those with non-production values, usually the people who presented these interests attended as part of their employment. Consequently, all of their costs were paid and the time constraints that applied to the graziers did not apply to them.

Graziers reported being outnumbered and outvoted, not being classed as stakeholders, and their views not being discernible in the decisions that resulted from the processes. They acknowledge that one reason they are outvoted is because they are outnumbered. Their capacity to attend is hampered by time and distance constraints as reported, but also because of an unwillingness to attend based on the outcomes of previous consultations. The costs of attending were considered to be greater than the benefit received, which for some led to a decision not to participate. There are two alternate explanations for this. The first is that the facilitators may not have had the necessary facilitation skills to allow all the voices to be heard. Kelly (2001) made this observation in her study, which included the Central West location in the current study. The second is that the facilitators or decision-makers were biased in favour of non-production values. I observed both of these patterns at consultation events I attended and in the discussions that took place.

The resulting cynicism found in the current study confirms results from other studies involving farmers (CIE 1997; Cocklin, Dibden & Mautner 2006). As members of a group in society which have a long history of political dominance, they were keenly aware of their current politically marginalised status (Green 2001). They recognised that how consultation processes were organised and facilitated effectively silenced their voices. Kelly (2001) found that the most important reason landholders gave for participating in consultations was because they hoped to influence the government and share in decision-making. With the rise of participatory democracy (Sanoff 2000), the declining rural populations and reduced influence of farmer organisations (Halpin & Martin 1996), participation in consultation events is one of only a few remaining opportunities to influence government decision-making. Study participants experienced the loss of this opportunity in a very personal way. For those agrarian fundamentalists who believed that agriculture is the foundation of economic activity, and therefore that farmers and farming are inherently important, feeling marginalised was a heavy blow.

Graziers felt their production interests were marginalised because they perceived that priority was given to environmental protection and Aboriginal land rights. The *Mabo* and *Wik* decisions and the vegetation management legislation in Queensland have changed the administrative and legal landscape in which graziers live. After having purchased the leasehold title of the land they live on, many are now waiting to see whether they will be sharing the title with Aboriginal Australians, which would be allocated through a legal

process, not purchase. Some of the graziers in this situation already had informal access arrangements to their land with local Aboriginal Australians. Although they appreciate the rationale for the legislation, they considered the result to be inequitable. The strong work ethic, the hard work and difficult financial circumstances that some graziers experienced contrasted sharply with the lives that they saw their Aboriginal neighbours living. As Holmes (2002) observes the graziers see their legal rights diminishing as those of Aboriginal Australians are increasing. The land rights of Aboriginal Australians first recognised with the *Mabo* decision in 1992 have increased, with the *Wik* decision now being implemented through Indigenous Land Use Agreements (ILUA). This has created anxiety for graziers about what further losses they may experience if this direction of change continues. Aboriginal land rights were a direct challenge to accepted, though not legally enshrined, rights of occupancy enjoyed by graziers since colonial settlement. The gravest concern that graziers have is that, because of the direction of change, which began with Aboriginal Australians being granted land rights, combined with the slow and opaque native title claims processes, the graziers' (leasehold) land rights may be further eroded giving them increasingly less control over earning their livelihood.

Graziers felt environmental interests marginalised their own. This was through perceived economic disadvantage and reduced security of tenure. An example of this is vegetation management legislation preventing property development through tree clearing to increase productivity, which would assist them to achieve continued financial viability. Those who had cleared land in the past were aware of the dramatically increased productivity this provided. These financial benefits were highly valued in a climate of narrowing profit margins. A related concern was the restriction on the removal, through clearing, of regrowth[15] which ultimately reduced the productive capacity of the land. Although these graziers recognised that caring appropriately for their land was a way of ensuring its long-term productivity and perhaps a future for their children, they were not in agreement with all of the scientific explanations that underpinned the regulations, a perspective which has been found previously (Carr 1994). Graziers believed that they were disadvantaged economically by the perceived preferencing of environmental interests.

[15] This includes the ability to clear 'woody weeds', tree regrowth on pastured land.

In addition to being prevented from developing or maintaining their land to increase productivity, the sentiment was expressed that rural Queenslanders were expected to carry the burden of environmental care for all of Queensland. Again, this referred to the costs of environmental protection, or lost income from the prevention of tree clearing. Specifically, this referred to the graziers observing that there were activities that they could not undertake because of the risk of, or actual environmental degradation. By comparison, they could identify environmentally destructive behaviour by urban Australians that was not regulated.

Graziers were concerned that the new leasehold conditions may decrease the security of their tenure. The draft document (DNRM 2003) demonstrated that the goal of environmental protection had replaced the earlier development conditions, which is consistent with the current government focus on protecting natural resources (RM Consulting Group 2006). Concerns were expressed that if lease renewal was conditional on specified environmental standards being met, then graziers may lose their livelihood and their children lose their future if the conditions were not met.

Both Aboriginal land rights and environmental interests were perceived to be those of urban Queenslanders and, because the majority of the population is urban, politicians were accused of 'vote-catching' behaviour in the hope of being re-elected. As others have found (Cocklin, Dibden & Mautner 2003; Finlay, Crockett & Kemp 2005; Kemp et al. 2004), graziers in this study felt that urban environmental interests exerted a high level of influence on their land management practices. An inquiry found that being required to contribute to public good conservation programs, but only receiving limited or no benefit, was considered by landholders to be an inappropriate policy (Commonwealth of Australia 2001), and consistent with the findings of this study. Finlay, Crockett and Kemp (2005) found that rural landholders felt the ability of urban people to influence their management techniques without the graziers having reciprocal influence, was inequitable. This was particularly so because urban people were not considered particularly knowledgeable about the issues or impacts (Finlay, Crockett & Kemp 2005). Consistent with this, Cocklin, Dibden and Mautner (2006) reported that, throughout their results on the stewardship scheme, there was a theme of anxiety about public attitudes towards farming practices and that farmers wanted to be recognised for the environmental work they were undertaking.

What graziers are experiencing is consistent with what Holmes (2006) described as a re-ordering of the three primary human uses of land – production, consumption and protection – or the changing values of land use. Whether the post-productivist transition is occurring in Australia is being debated (Argent 2002; Bjorkhaug & Richards 2008; Wilson 2004), but is not the focus of this study. However, there are clearly discernible changes in the values of land use apparent in this study which are consistent with the post-productivist transition and multifunctionality as discussed in Chapter 2.

In summary, because graziers saw their interests being marginalised, they were concerned that ultimately their futures were being put in jeopardy through the negative economic impacts associated with this and the decreasing security of their tenure. Their opportunities to address the perceived marginalisation appeared to be very limited. The primary avenue, through consultation, was no longer a viable option as this was a site of marginalisation. The voting option was similarly limited because 85 percent of the Australian population live within fifty kilometres of the coast (Bourke & Lockie 2001, p. 5).

Australian rangelands commentators have been aware for some time that rangeland users have conflicting values (Ash & Stafford Smith 2003; Holmes 1994; Holmes & Day 1995; Taylor & Braithwaite 1996) and have identified the need for these to be addressed through a combination of policy, and knowledge and skill development acquired through learning (Ash & Stafford Smith 2003; Taylor 2003). This study reveals how these graziers experienced the conflicting values being played out, which confirms that the conflicting values found by others, remain. These graziers conceived of this situation being as being a key factor in jeopardising their future.

The implications for sustainable development

An understanding of how graziers interpret sustainable development needs to acknowledge that today's graziers are shaped by continually evolving political, social, environmental and economic circumstances. In addition, it is important to acknowledge that sustainable development is inherently difficult, and the effectiveness of policies will determine where compromises are made, as this study has shown. The implications of this interpretation of sustainable development are now discussed.

Preferencing the economic dimension of sustainable development

The aim of this study was to develop an in-depth understanding of graziers' perceptions of sustainable development through developing an understanding of the social, economic and environmental factors that influence their interpretation. The key finding of the study is that graziers preference the economic dimension of sustainable development. This result is not unexpected. A grazing enterprise is a business and the goal of any business is economic survival. The grazing industry operates in a volatile international marketplace and relies on an unpredictable climate. This context combined with the long term declining terms of trade and removal of government support during recent decades has resulted in a narrow financial operating margin which has required graziers to hone their skills in order to survive financially.

Graziers' preference for the economic dimension of sustainable development is significant for two reasons. Firstly, the robustness of the findings suggests that the economic priority may apply more broadly. Although the sampling technique used in this study does not allow for these results to be generalised beyond this sample, the very similar results in each of the study locations demonstrates that these findings are robust, as this suggests a level of replication (Yin 2003). If further research confirmed this result, the implication is that those who conduct the day-to-day management of more than 80 percent of the land in Queensland (ABS 2001, p. 58; 2008, Table 4), preference the economic dimension of sustainable development. This would have significant policy implications. Participants confirmed that the strong business management focus which underlies the economic preference apparent in this study was born out of necessity. The graziers' need for business management skills was admirably supported by training made available under the Farm Business Improvement Scheme and Queensland graziers have certainly availed themselves of these opportunities (Queensland Rural Adjustment Authority 2004). A concern raised in this study about the increased need for graziers to use business management skills which occur in the office setting, is that this removes them from the paddock where they learn essential land and stock management skills. This raises several questions. If there is a knowledge loss as claimed, will this ultimately result in poorer land management practices? Could this business focus create a downward spiral where business skills are increasingly relied upon in lieu of more fundamental knowledge? Will scientific knowledge will be created at the property scale in these landscapes that can effectively replace observational and experiential learning, for the next

generation of graziers. A related question is whether this knowledge would be taken up by the next generation of graziers.

The second reason that this result is significant is that the graziers' preference in this study contrasts sharply with the government interpretation of sustainable development in the NSESD, which preferences ecologically sustainable development and public good benefits. The divergent preferences revealed here, resonate with the graziers' perception that government preferences environmental interests over production interests and are no doubt one source of the alienation reported by graziers. However government is expected to take into account the interests of all of their constituents, not one industry sector and one that contributes less three percent to the Gross Domestic Product (ABS 2005b, p. 428). The differing preferences may continue to be a source of conflict.

The third reason that the economic preference is a significant result is because it is consistent with economic rationalist policy that encourages increased productivity to ensure self-reliance and independence from government financial support (Higgins & Lockie 2001). This preference is therefore consistent with the government economic policy goals for graziers. The question here is whether graziers are being compliant with policy, or whether coincidentally government policy is consistent with their goals. Another key finding of the study, that the primary driver for much of this sample is their social goal of wanting to continue their preferred way of life, suggests that it may be coincidental. However other commentators (for example Martin 1997) suggest that economic rationalist polices while appearing to promote the notion of empowerment through self-reliance masks a more subtle influence .

Intragenerational and intergenerational inequities

Graziers' perceptions of the social dimension of sustainable development relate to intragenerational and intergenerational inequities in the provision of infrastructure and intragenerational inequities related to their belief that they and their production interests are being marginalised. The lower level of infrastructure provision to rural Queensland than to urban Queensland and the lower level of service access reported by graziers in this study accurately describe the well-documented reality. Government policy no longer aims to provide rural residents with a comparable standard of infrastructure to urban Australians (Haslam McKenzie 2000). Diminishing infrastructure, a lack of infrastructure and the decline

of existing infrastructure in rural and regional Australia have previously been documented as issues (Black et al. 2000; Commonwealth of Australia 2000). Two recent government reports identified deficiencies in roads all around Australia, and recommended that funding be allocated to correct this (Commonwealth of Australia 1997, 2000). The more recent report identified that investment in roads was associated with economic development, with investment providing positive regional flow-on effects (Commonwealth of Australia 2000). As reported in Chapter 2, despite the Productivity Commission recognising that rural and regional Australia relies on roads for goods transport and services access, most road transport infrastructure reforms are yet to occur (Productivity Commission 1999a). Infrastructure and service provision are intergenerational inequities because the negative impacts on the health and welfare of these (and other) rural residents will influence the next generation's life chances. The issue for graziers in this study is the added cost these disparities create for enterprise management.

The graziers' belief that they and their production interests are being marginalised would represent an intragenerational inequity if confirmed. This finding is of note for several reasons. Firstly, like their economic preference, it is at variance with the government perspective on sustainable development which has an almost exclusive ecological focus, although and social dimension of sustainable development is mentioned. Secondly, this represents a new angle on sustainable development. The perceived preferencing of environmental interests and Aboriginal land rights over the graziers' production interests has already been discussed at length. However, such anomalies do represent intragenerational inequities. Considering that government policy has moved from a sole production focus to one of protecting natural resources (RM Consulting Group 2006), with the NSESD being an example of this, but with a continued production focus (Gray & Lawrence 2001; Higgins & Lockie 2001), the grazier analysis appears to have some foundation. There is evidence of environmental protection interests impacting negatively on graziers' economic viability. The reduction of the economic viability of landholders because of the prevention of property development by vegetation clearing legislation was recognised in the *Vegetation Management and Other Legislation Amendment Act 2004* by financial compensation being made available to those affected (DNRM 2005). This suggests very strongly that intragenerational inequity exists, but the difficulty is in identifying the comparison group. Whose interests are being promoted over the graziers' production interests? The alleged benefits of improved environmental management are for the public good, which implicitly includes graziers. An

alternate perspective is that graziers have an opportunity to take advantage of the longer term perspective on the environmental that government is now taking. This policy change has occurred after more than a century of government knowing that broadscale environmental damage was occurring, but without taking decisive action (Holmes 2002). With most policy changes, as well as regulation there are subsidies and similar opportunities (such as the *Caring for our Country* program) available to graziers to explore how to take a more environmental productive approach that will complement their longer term productivity.

Aboriginal native title rights have diminished what the legal status of graziers appeared to be. The significant change was the recognition that Aboriginal Australians did have land rights. This created an enormous emotional challenge for landholders in a country that was built on the assumption that only Anglo Australians had any rights. It was as recently as 1967 that Aboriginal Australians were granted rights that gave them an equal standing to Anglo Australians. Aboriginal land rights continue to be an issue for this sector in society, perhaps because they have most to lose. Although native title legislation does not put the ownership of their land at risk, what were once considered almost exclusive rights of access, can no longer be assumed. People unknown to them may be found to have a birth right for unlimited access to the grazier purchased and owned land. By comparison the recognition of Aboriginal land rights has had no such impact on the urban majority.

Consequently there are tensions with how graziers relate to Aboriginal Australians. This is built on the long association between graziers and Aboriginal Australians, which consisted of both amicable employer-employee relations and violence. Although there is little acknowledgement by the graziers in this study of the rights or needs of Aboriginal Australians they are certainly sympathetic to their distress. They believe that Aboriginal Australians' inferior position in society is largely the fault of government, but generally resist the notion that Aboriginal Australians should have right of access as a birth right, to the land they the grazier has purchased. That is part of their incapacity to accept or value a way of life that is different to theirs. As other commentators have reported (Holmes 2002; Stafford Smith, Morton & Ash 1997) this is an example of the conflicting values in the Australian rangelands.

The third reason that the perceived preferencing of environmental interests and Aboriginal land rights over the graziers' production interests is of interest is because of how these inequities are perceived to be operationalised – through consultation processes. Although

public consultation processes in these locations have been criticised previously (Cox 1996; Kelly 2001), this study reveals a new criticism: that through consultation processes, Aboriginal land rights and environmental interests marginalise production interests. The level of anger towards government and long experience of feeling duped from consultation processes, invariably leads graziers to believe that the marginalisation of their interests is deliberate. I challenge this believe based on the body of literature known as the post productivist transition literature which identifies that there are now competing values of the rural. Typically the contests over land use and value are conducted in areas of closer proximity to urban Australia (see Curry, Koczberski & Selwood 2001; Tonts & Greive 2002). Holmes (2006) has theorised about this change occurring in the locations involved in this study. I suggest the results of this study provide empirical evidence of this occurring. Therefore rather than being a deliberate attempt by government to marginalise graziers, they are perhaps victims of global change in some sense, much like Gray and Lawrence (2001) argue that farmers are victims of globalisation.

Rather than boycott consultations which some graziers in this study choose to do, their interests may be better served if they engaged with government either directly or through industry bodies, in order to better understand the broader process they are part of and seek opportunities to be a part of the change that appears to be occurring. If indeed government is inadvertently marginalising and alienating the industry sector that controls or manages more than 80 percent of the land in Queensland, they may need to reconsider their approach. This is of particular importance because of the current emphasis on improving land management practices for a more viable future Australia. The high level of anger towards government with a largely disengaged industry sector has the potential to result in civil disobedience. Although farmers rarely unite and act collectively, there are on-going examples of civil disobedience in Queensland with illegal tree-clearing.

Balancing the economic and environmental dimensions of sustainable development

Balancing the three dimensions of sustainable development – social, economic and environmental is an idealistic goal. It is the need to combine economic development with environmental protection in a socially responsible way that is the essence of sustainable development. This continues to be a challenge for land managers and governments across the globe.

The results of this study demonstrate that some graziers were unable to balance the economic and environmental dimensions of sustainable development. Like graziers preferencing the economic dimension of sustainable development, this result is not a revelation. Such is the history of environmental degradation by Australian farmers an opposite finding is unlikely to be considered credible. This result is consistent with Barr and Cary's (2000, p. 7) point that 'family, personal and financial security are generally highest priority goals in Australian farm families … [higher] than concerns over resource issues', and Lawrence, Graham and Clark's (1994, p. 198) conclusion that 'ecological ideals were clearly over-ruled by the economic necessity of making as much money as possible to meet short-term economic needs, to recover from the previous high interest rate, inflation, recession and continual drought periods'.

The financial challenges that graziers in this study list are many: being market and season dependent was considered the greatest immediate threat. Significant financial costs are associated with ongoing economic viability. These included items such as building property infrastructure and property amalgamation; these create or increase debt. The infrastructure provision and service access also create costs. These challenges exist in the context of continuing declining terms of trade and the now well-established economic rationalist policy that encourages financial self-reliance. Increased productivity promoted by government to manage the cost-price squeeze, being financially independent of government and being internationally competitive were the goals of a deregulated agricultural sector (Higgins & Lockie 2001), but this was to occur without further environmental degradation (MacLeod & McIvor 2003). However, in order to achieve economic viability, some graziers borrow from their children's future by over-grazing to meet short-term financial needs, and do so knowingly.

Over-grazing is an intergenerational issue. Because this a qualitative study, the goal was not to quantify over-grazing, but to understand the context in which it occurred. Even though occasional over-grazing was reported, no conclusions can be drawn about the degree of over-grazing and therefore the environmental impact. However, over-grazing is known to reduce ecological diversity, increase salinity, erosion and weed infestation, and reduce productive capacity; it also causes off-site environmental and economic impacts (Gretton & Salma 1996; Woodhill 1999).

This result suggests that the policy settings created to balance the economic and environmental dimensions of sustainable development, if not preference the environmental dimension (as in the NSESD) have failed. This policy failure may reflect a lack of policy integration as several commentators argue (Batini & Claymore 2000; Dovers & Wild River 2001; Morrison, McDonald & Lane 2004). Alternatively, despite the NSESD, some authors argue that at least agricultural policy reflects the concept of 'weak' sustainable development (Scott, Park & Cocklin 2000), which is where constructed capital is believed to be able to replace natural capital (Pearce 1993). The twin government goals of farmers increasing productivity, which in the past contributed substantially to environmental degradation, with government support, combined with the more recent goal of protecting the environment (RM Consulting Group 2006), is consistent with weak sustainable development. The continued environmental degradation that State of the Environment reports document (DEWR 2001, 2006), not just from agricultural production but from all industries and urban occupation, is consistent with the concept of 'weak' sustainable development.

Therefore, reducing the stock of natural capital for future generations, such as a healthy biophysical landscape, if it was balanced by the creation of constructed capital, could be interpreted as equitable and not as a breach of intergenerational equity. A question that needs to be considered in this context follows - is 'some' over-grazing consistent with a policy position of weak sustainability and therefore by default, condoned by government?

If the current scenario described by graziers in this study is maintained, the likely outcome is that a level of over-grazing will continue but will increase over time as productivity decreases because of the decreased productive capacity of the land and the continuing cost-price squeeze. Ultimately, some areas of the rangelands will become economically unviable and, as currently proposed by Ash and Stafford Smith (2003, p. 199), these areas would be 'removed from use' to prevent further environmental degradation or, as Holmes (2006) suggests, changed land use will occur.

This is an outcome that no participants in this study would desire, yet some of them engage in a practice – over-grazing – that will contribute to this outcome. The challenge that is uppermost in their mind is remaining there in the short term, as without this they cannot hope to be there in the longer term which is their ultimate goal. There is a raft of factors that reinforce this short term focus, but primarily it is the nature of the business that they have

chosen, that determines that they are dependent on volatile international markets and an unpredictable climate. For many this is underpinned by a narrow financial margin for error because of the cost-price squeeze. Where this way of life has been chosen and is maintained at a cost to future generations, one needs to ask if this demonstrates an acceptable level of integrity, regardless of policy settings?

The social component of farming as a driver

The most significant finding from this study is that a social component of farming is a driver. It is the strongest influence on how graziers interpret sustainable development. This study demonstrates that graziers have production, consumption and protection goals (see Holmes 2006). The production goals are demonstrated by the nature of their business, their protection goals are reflected in their desire to manage the land for the longer term, and their consumption goals are represented by their primary aim being to continue their preferred way of life. Although the coexistence of these goals in an agricultural or subsistence setting was already known (Dobbs & Pretty 2004; Holmes 2006; Potter & Burney 2002), and it has long been recognised that farmers have non-economic goals that are important to them (Gasson 1973; Johnstone 1940), this study has shown that for these graziers their most highly valued goal is consumption – continuing their preferred way of life. Some elements of the grazing way of life have been found previously, such as independence which is an aspect of the lifestyle (Anderson 2004; Cary & Holmes 1982; Gasson 1973; Holmes 1986, 1995; Kerridge 1978; Webb, Cary & Geldens 2002), the hardships (Alston 1997; Alston & Kent 2004; Gray & Lawrence 2001; Haslam McKenzie 2000; Lloyd & Malcolm 1997; Stehlik, Gray & Lawrence 1999; Tonts 2005), agrarian fundamentalism (Beus & Dunlap 1994; Dalecki & Coughenour 1992), and the challenges and satisfaction (Cary & Holmes 1982; Gasson 1973; Holmes 1986, 1995; Kerridge 1978; Webb, Cary & Geldens 2002). This study builds on earlier research by providing a more comprehensive account through the discovery of additional elements such as realising a dream, the rural idyll and choosing to go there and wanting to stay, together with other aspects of the lifestyle element. What these combined elements demonstrate, but particularly with the additional elements, is that there is a potentially powerful driving force for graziers to continue their chosen way of life. If the grazing way of life is the realisation of a dream and therefore if an active choice was made to take up this way of life, the person had a passion for the bush that helped them persevere and choose to stay on despite the hardships, to enjoy the beauty of the bush, raise their children in an ideal environment and achieve the desired level of material comfort, then this is a powerful

mix. It also provides a contrasting view to the struggling family farmers with which the literature is replete, and a contrasting view to the production-driven farmer. The two factors that may have contributed to revealing this more comprehensive set of elements are, first, that most Australian studies that have reported in this area sampled farmers experiencing financial distress (Cary & Holmes 1982; Holmes 1986; Kerridge 1978; Webb, Cary & Geldens 2002), whereas this study sought a diverse sample, and second, most of these studies used a quantitative approach, which contrasts with the in-depth qualitative methods and inductive analysis used in this study.

Although it is known that graziers do enjoy a particular way of life, and this is important to them, this study shows that leveraging this social goal has the potential to provide a previously untried pathway to more sustainable development. A more dynamic approach than the current NSESD is needed to capture the energy and passion that the graziers in this study appear to have for their way of life. The energy comes from graziers' desire to continue the grazing way of life. They believe in what they do; they have an appreciation of the landscape; the lifestyle allows them to balance their business with their lifestyle; it is where they want to raise their families; and the work offers independence, challenges and satisfaction. Many experience the standard of living that they desire. Many chose to go there and choose to stay, despite the hard life, isolation and family pressures. Leveraging from this set of beliefs has the potential to progress the sustainable development agenda. Participants in this study indicated that they improved their business management knowledge and skills in order to remain on the land. Does this mean that they will improve their land management practices if this is what is required of them in order to stay?

A strategy that the results of this study suggest may be successful is using the value placed on the social component of farming, to leverage changed land management practices to work towards sustainable development. There is potential to achieve this through graziers continuing to live on their land but receiving incentives or compensation for the provision of environmental services solely, or in conjunction with production goals. Environmental services in this situation would thus be met through the delivery of ecosystem services. These are the benefits that people obtain from ecosystems, such as the production of clean water, the maintenance of fresh air, and the conservation of healthy soils (Williams & Saunders 2005). This is achieved through reduced grazing pressure on sections of the property involved in the project, or it may involve destocking these areas. Landholders are paid a fee to provide these

services, which are known as stewardship payments (Greiner, Cocklin & Gordon 2006). An example of a successful ecosystem services project is the Desert Uplands Buildup and Development Strategy Committee, Landscape Linkages project which achieved a 40 percent increase in ground cover in an area of more than 85,000 hectares during the first year of the project through reduced grazing pressure (Adams & Lingard 2008). The purpose of this two-year project is to demonstrate to participants the environmental benefits of reduced grazing pressure. Funding for ecosystems services projects like this is now available under the *Caring for our Country* program (Australian Government 2007). In UK and Europe, ecosystems services schemes are known as agri-environmental schemes (Greiner, Cocklin & Gordon 2006). These schemes have taken a further step than the Desert Uplands project because not only is there a goal of environmental protection, there is also a goal of farmer income support (Wilson & Hart 2000). If this approach were taken in Australia, it would have the potential to assist graziers on economically marginal grazing land to continue their way of life, which is their primary goal, and would also provide ecosystem services. In a review of participation in agri-environmental schemes across ten European countries, financial considerations were the primary driving force for participation, followed by the goodness-of-fit of the scheme with their farm management plan; however, more than half of those questioned also mentioned environmental conservation as a reason for their participation (Wilson & Hart 2000). Farmers are known to have a stewardship ethic which is consistent with this (Curtis & De Lacy 1997; Vanclay 1986). Using the social component of farming for leverage is one strategy that could be part of a set, to progress sustainable development.

Concerns have been raised about the environmental damage caused by those on economically unviable farms, in an effort to continue farming (Ash & Stafford Smith 2003). The suggestion of an ongoing stewardship arrangement is consistent with Holmes' (2006, pp. 143, 149) notion of changing land use to 'non-farm use' such as in his 'marginalised agricultural/pastoral occupance' mode, which he identified as being 'in the rangelands … across the arid interior and northern tropical savannas … [with] areas of small, non-viable properties experiencing prolonged economic stress'. Holmes' (2006) assessment of the trajectory of this mode of occupancy was uncertain but he mentioned that one alternative trajectory was adapting production strategies to improve protection outcomes, which could include the provision of ecosystem services. Consistent also with this idea is the provision of stewardship programs under the *Caring for our Country* policy (Australian Government 2008a).

This approach has the potential to capture the benefits of the way of life that is so highly valued by graziers, and maintain the ecological value of the land – if not improve it. This is consistent with Tothill and Gillies' (1992) claim that the widespread deterioration of land in northern Australia could be remedied by changed land management practices.

Chapter 8 Conclusions

Introduction

The purpose of this chapter is to draw together the main findings from the study and identify the contribution to knowledge made by the study. The limitations to the study and future directions for research conclude the chapter.

The aim of the study was to gain an in-depth understanding of graziers' perceptions of sustainable development. The rationale for this was that despite a large volume of literature on sustainable development, comparatively little was known about how graziers, who are responsible for the day-to-day management of most rural land in Queensland, interpret sustainable development. In addition, there is a long history of environmental degradation in Australia, largely from agricultural practices. Despite the NSESD being introduced in 1992, there is a lack of evidence that the problem is being addressed adequately. This history, combined with the economic importance of agriculture to Australia for much of the nineteenth and twentieth centuries, followed by the declining terms of trade, globalisation and the economic rationalist policy response, has served to focus attention on the environmental and economic dimensions of sustainable development. Therefore, a holistic, integrated account of why these problems continue was lacking, which is where this thesis makes a contribution.

Social science is believed to be capable of contributing to the understanding natural resource management issues because the problems are believed to be largely in social not biophysical systems, and because of social sciences' ability to frame the context for the application of other knowledge. An interpretative exploratory approach was selected because of the lack of knowledge on this specific topic. In-depth unstructured interviews were the primary method, supported by participant observation. An inductive approach with data collection and analysis being conducted concurrently allowed the conceptual analysis to evolve as the study progressed. This represented the methodological approach to a previously unexplored topic.

The main findings of the study are as follows:

1. Graziers preference the economic dimension of sustainable development over the environmental and social dimensions.

2. The economic dimension is preferenced because the social component of farming is a primary driver for these graziers. There is a strong desire to continue their preferred way of life, and maintaining economic viability allows them to do this.
3. Intragenerational issues were identified around Aboriginal land rights and environmental protection interests. The primary concern was that the increasing strength of these protection interests over their production interests is a threat to their future through reducing the security of their tenure.
4. The environmental dimension of sustainable development may be compromised to accommodate social goals and economic priorities.
5. A whole-of-enterprise approach is taken to managing the business.
6. There were few differences between the Central West and Gulf study locations. There was a greater concern among Gulf graziers with distance, infrastructure, government processes and priorities, whereas for the Central West graziers the concerns were about seasons, services and enterprise management. Similarly there were few differences between private graziers and company managers. Private graziers were more concerned about markets, extensions services and government processes and priorities, while company managers were more concerned about service loss and sub-standard telecommunications.

This study demonstrates that graziers' preference the economic dimension of sustainable development, and shows why. For many of the graziers in this study, the primary goal was to continue their preferred way of life. Although it was already known that the social component of farming was highly valued by farmers, this study shows that for this sample, it is of primary importance. This was so for private graziers and company managers. The private graziers could only continue their preferred way of life if they maintained economic viability. This is where their energy was focused – on meeting their social goal. Continued economic viability is influenced by the nature of the grazing industry and the role of agriculture in Australia.

The nature of the grazing industry provides significant challenges, and particularly in these locations – this industry is market and season-dependent. International markets are volatile and the seasons, particularly in the Central West, are variable. This market and season

dependence inevitably creates an economic focus. The cost-price squeeze which has been impacting negatively on farmers for almost 70 years, deregulation for 40 years and globalisation for 30 years, have each had negative economic impacts. These have served to create an increasingly challenging economic environment. For decades graziers have been required to increase their productivity in order to survive economically. This study reports the specific strategies that the graziers have used to increase their productivity early in the twenty-first century. These are the business and land management strategies that are recommended in the literature and by government. The set of business management strategies outline in this thesis have nott been previously been documented.

When agriculture was of economic significance to the national economy, and prior to the devastating environmental damage that resulted from productivism gaining policy attention, farmers received high levels of government support. This support was withdrawn under economic reforms designed to make Australia more internationally competitive. Government support is now directed to the protection of natural resources, and farmers are expected to be productive and efficient without government assistance, to contribute to making Australia more competitive globally, while also acting responsibly towards the environment. The economic policy settings are based on economic rationalism which promotes self-reliance for the farmer which contrasts with the public good settings of environment policy.

Of particular interest, this study shows that environment management is a part of the overall management of the property, not treated as a separate dimension as in policy. This reflects the view of many graziers in the study that the social, economic and land management dimensions are an integrated system where one impacts on the other. Although this reflects the view of government such as in the NSESD, economic and environmental policy frequently operate in a parallel rather than integrated way.

Although Aboriginal land rights and environmental protection issues have been raised previously in the literature, the anticipated impact of reduced security of tenure, from these interests when combined, has not been reported previously in Australian literature in the context of sustainable development. However, these concerns are consistent with views expressed in the literature that economically marginal grazing land should be taken out of use or predictions that it will be put to a different use. The post-productivist transition perspective would conceive of these new interests as challenging the hegemony of agriculture in rural

areas. This literature is briefly explored in this thesis but it may be a rewarding area to pursue to further investigate this.

When the environmental dimension is compromised to accommodate other priorities, particularly economic priorities, this would be consistent with a long history in Australian of land management practices that have resulted in environmental damage. Although targeting farmers to change land management practices has been criticised in many ways, and has yet to result in an adequate level of environmental protection, the broader issues thus far have not been dealt with.

A strength of this study is how this methodology was applied to important but previously unexplored research questions and has provided new findings in the large and well-researched area of sustainable development. The holistic approach has provided an integrated account of the social, economic and environmental influences on graziers' perceptions of sustainable development and what the implications are for sustainable development. This provides a framework for the application of existing discipline based knowledge and demonstrates how social science can contribute to better understanding natural resource management issues.

Limitations of the study

The findings of this study cannot be generalised to the population of Queensland or the tropical savannas because of sampling. However, as an exploratory study, the small scale and emphasis on understanding were appropriate, and provide the groundwork for future research.

Presenting the graziers' interpretation of sustainable development has contributed to the small body of knowledge about sustainable development. A study that canvassed the less well-known interpretations of other stakeholders in these study locations would have made this a more valuable contribution. I expand on this in the next section. Some socio-demographic data was collected through a brief questionnaire as one of the supporting methods, and this provided a more nuanced interpretation of the results. However, if a longer questionnaire was added to the set of methods used, with a random or representative sample and a more comprehensive set of questions, this would have provided a stronger approach to triangulation. The time and costs associated with extra data collection were prohibitive, and the relationships usually developed through networking to achieve a response rate that would allow conclusions to be drawn were beyond the scope of the study.

Although a discourse analysis of policy documents was a component of the original research design, at the commencement of the study the large number of possibly relevant documents, balanced with the limited knowledge of the topic which would have allowed a focused selection, precluded this task from being undertaken. As the analysis progressed, it became apparent that there was a broad range of literature relevant to this thesis. A compromise was made at that point to use the available time to focus on the literature rather than conduct a discourse analysis of policy documents. However, this would have provided a more integrated analysis of graziers' interpretation of sustainable development.

Future directions for research

The main findings of the study suggest areas for future research, as do the limitations of the study. However, because this is the first time this particular approach has been taken and new results reported, an important first step would be an attempt to replicate. One alternative would be to conduct the same study in other locations. A more productive approach may be to build on the findings of this exploratory study by mounting a larger quantitative study, or set of studies, built around reframing each main finding as a research question. If this approach were to be taken an important component would be sampling that would allow generalisation to the population from which the sample was drawn. An option would be to target graziers and pastoralists in a national study by questionnaire or structured interview. There are several potential benefits to such a larger quantitative study. One may be the confirmation of the findings of this small exploratory study through replication. Using the main findings as research questions, in one or a set of studies, would retain the holistic approach used in this study. The ability to generalise the results to the population of graziers would provide a stronger outcome on which to base policy or further research.

Apart from the areas already suggested, there are several studies that, if mounted, would make a worthwhile contribution. Although graziers in this study reported a business management approach consistent with what is recommended and similar to what other studies have reported, to date there is only a small body of knowledge about these practices. A worthwhile contribution to this knowledge base would be an economic analysis of the effectiveness of the business management approach used. Similarly, although in this study the graziers reported appropriate land management practices, with the exception of occasional over-grazing, a more detailed investigation of the practices – and importantly, the outcomes at the property level –

would provide useful data. It could be useful for the individual grazier, but it would also add to a developing knowledge of appropriate land management practices.

The current study has provided a broad overview of this sample of graziers' interpretation of sustainable development. It provides a useful base on which to develop a more sophisticated and integrated understanding of this interpretation through a more in-depth analysis of the relationships between the dimensions of sustainable development, the relative weightings that are given, and how these change with varying circumstances and over time.

More socio-demographic data, such as age and gender, and including other family members – particularly children – could be included in later investigations in order to provide a more comprehensive description of participants and their circumstances. In addition, children may be tomorrow's graziers so their perceptions of sustainable development are of fundamental importance. Ideally, a qualitative method would be used to ensure the results of the quantitative study proposed were interpreted appropriately. This is a typical role for qualitative methods and would be conducted after the data had been collected, during the analysis phase. There would be the opportunity to call on existing networks in Queensland to assist here, but as graziers are known to prefer one-to-one contact rather than group contact (Moffatt 2007; Shrapnel & Davie 2001), this would need to be done on an individual basis.

It is idealistic rather than realistic to suggest mounting large and comprehensive studies. However, the rationale beyond replication and extension of the existing findings, is a recognition that a holistic approach needs to be taken in studying sustainable development because the social, economic and environmental dimensions of sustainable development cut across all aspects of living.

Future research in the tropical savannas and the northern rangelands would be to investigate the other less well-known interpretations of sustainable development, because as this and other research has suggested, there are multiple land users and changing values of rural land use which all impact on progressing sustainable development. The most important of these would be the interpretation of Aboriginal Australians, and ideally it would be Aboriginal Australians who undertook the investigation into how their contemporaries interpreted sustainable development. This would be most appropriate culturally, and simultaneously reduce what can be barriers to sharing information and the correct interpretation of meaning.

An important contribution could be a policy analysis, as already suggested, though this would be a large undertaking if it was to be sufficiently comprehensive – that is, to cover the dimensions of sustainable development adequately. A point to note is that the use of resources to further investigate sustainable development would need to be balanced by the knowledge that sustainable development is a long-term goal and unlikely to be achieved in the short term. Therefore it is important to increase knowledge on how to progress sustainable development in a changing social, economic, environmental and political environment.

References

Abel, N, Ross, H, Herbert, A, Manning, M, Walker, P & Wheeler, H 1998, *Mental Models and Communication in Agriculture*, Rural Industries Research and Development Corporation, Canberra.

Abel, N, Ross, H & Walker, P 1998, 'Mental Models in Rangeland Research, Communication and Management', *Rangelands Journal*, vol. 20-21, no. 1, pp. 77-91.

ABS 2000, *Agriculture - Establishment Counts by ANZSIC by Area of holding*, Australian Bureau of Statistics, Canberra.

---- 2001, *7113.0 Agriculture Australia 1999-2000*, Australian Bureau of Statistics, Canberra.

---- 2002a, *2001 Census Community Profile Series: Queensland*, Australian Bureau of Statistics, Canberra.

---- 2002b, *A Snapshot of Queensland*, Australian Bureau of Statistics, Canberra.

---- 2005a, *Year Book Australia 2005*, 1301.0, Australian Bureau of Statistics, Canberra.

---- 2005b, *Year Book Australia 2005. Article - 100 years of change in Australian Industry*, 1301.0, Australian Bureau of Statistics, Canberra.

---- 2006, *7503.0 Value of Agricultural Commodities Produced, Australia 2004-2005*, Australian Bureau of Statistics, Canberra.

---- 2008, *7125.0 2005-06 Agricultural Commodities: Small Area Data, Australia*, Australian Bureau of Statistics, Canberra.

Adams, RM & Lingard, A 2008, 'Landscape Linkages Progress Report', paper presented to the Desert Channels Queensland Board Longreach, 1st May.

Adams, W 1990, *Green Development: Environment and sustainability in the Third World*, Routledge, London.

AFFA 1999, *Managing Natural Resources in Rural Australia for a Sustainable Future. A discussion paper for developing a national policy*, Agriculture, Fisheries and Forestry - Australia, Canberra.

Aitkin, D 1985, ' "Countrymindedness" - The spread of an idea', *Australian Cultural History*, vol. 4, pp. 34-41.

Alpers 1979, *The Singer of the Eclogues*, University of California Press, Berkeley.

Alston, M 1997, 'Socio-cultural factors and family farming', in J Lees (ed.), *A legacy under threat? Family farming in Australia*, University of New England Press, Armidale, pp. 99-119.

---- 2004, 'Who is down on the farm? Social aspects of Australian agriculture in the 21st century', *Agriculture and Human Values*, vol. 21, pp. 37-46.

Alston, M & Kent, J 2004, *Social Impacts of Drought. A report to NSW Agriculture and NSW Premiers' Department*, Centre for Rural Social Research, Charles Sturt University, Wagga Wagga.

---- 2006, *The impact of drought on secondary education access in Australia's rural and remote areas. A report to DEST and the Rural Education Program of FRRR*, Centre for Rural Social Research, Wagga Wagga.

Alvesson, M & Skoldberg, K 2000, *Reflexive Methodology. New Vistas for Qualitative Research*, Sage Publications, London.

Anderson, J 2004, 'Kin, Cows and Capital: Dairy industry deregulation and the maintenance of farming traditions on the Atherton Tableland, Australia', Doctoral thesis, University of Western Australia.

Annells, M 1996, 'Grounded Theory Method: Philosophical Perspectives, Paradigms of Inquiry, and Postmodernism', *Qualitative Health Research*, vol. 6, no. 3, pp. 379-83.

ANZECC 1996, *Draft National Strategy for Rangeland Management*, Department of Environment, Sport and Territories, Canberra.
Argent, N 2000, 'Whither the lender of the last resort?: The rise and fall of public farm credit in Australia and New Zealand', *Journal of Rural Studies*, vol. 16, pp. 61-77.
---- 2002, 'From Pillar to Post? In search of the post-productivist countryside in Australia', *Australian Geographer*, vol. 33, no. 1, pp. 97-114.
Argent, N & Rolley, F 2000, 'Lopping the Branches: Bank branch closure and rural Australian communities', in B Pritchard & P McManus (eds), *Land of Discontent: The dynamics of change in rural and regional Australia*, University of New South Wales Press, Sydney, pp. 140-68.
Armstrong, M 1990, *Management Processes and Functions*, Management Studies Series, Institute of Personnel Management, London.
Arnott, A, Benson, R, Crawford, K, Herbert, S, Leybourne, M & Speirs, M 2001, *More than can be said: A study of pastoralists' learning*, Tropical Savannas Cooperative Research Centre, Darwin.
Ash, A & Stafford Smith, M 2003, 'Pastoralism in tropical Rangelands: Seizing the opportunity to change', *The Rangeland Journal*, vol. 25, no. 2, pp. 113-27.
ASTEC 1993, *Bridging The Gap: The social sciences, humanities, science and technology in economic development*, Australian Government Publishing Service, Canberra.
Austin, E, Deary, IJ, Gibson, G, McGregor, MM & Dent, B 1996, 'Attitudes and Values of Scottish Farmers: "Yeoman" and "Entrepreneur" as Factors, Not Distinct Types', *Rural Sociology*, vol. 61, no. 3, pp. 464-74.
Australian Government 2007, *Environmental Stewardship Programme*, Department of Agriculture, Fisheries and Forestry and Department of the Environment, Water, Heratige and the Arts, viewed 19th May 2008, <www.nrm.gov.au >.
---- 2008a, *Caring for our Country*, Department of Agriculture, Fisheries and Forestry and Department of the Environment, Water, Heratige and the Arts, viewed 19th May 2008, <www.nrm.gov.au >.
---- 2008b, *National Action Plan for Salinity and Water Quality*, Department of Agriculture, Fisheries and Forestry and Department of the Environment, Water, Heritage and the Arts, viewed 19th May 2008, <www.napswq.gov.au >.
---- 2008c, *Natural Heritage Trust*, Department of Agriculture, Fisheries and Forestry and Department of the Environment and Water, viewed 22nd May 2008, <www.nrm.gov.au >.
Babbie, E 1992, *The Practice of Social Research*, 6th edn, Wadsworth Publishing Company, Belmont, California.
---- 2004, *The Practice of Social Research*, 10th edn, Wadsworth Publishing Company, Southbank.
Barr, N 2000, *Structural Change in Australian Agriculture: Implications for Natural Resource Management*, Theme 6 Project 3.4, Department of Natural Resources and Environment, Canberra.
---- 2005, *Understanding Rural Victoria*, Department of Primary Industries, State of Victoria, Bendigo.
Barr, N & Cary, J 1992, *Greening a Brown Land. The Australian Search for Sustainable Land Use*, Macmillan Education Australia Pty Ltd, Melbourne.
---- 2000, *Influencing Improved Natural Resource Management on Farms: A guide to understanding factors influencing the adoption of sustainable resource practices*, Bureau of Rural Sciences, Canberra.
Barr, N, Karunaratne, K & Wilkinson, R 2005, *Australia's farmers: past, present and future*, Land and Water Australia, Canberra.

Barrell, J & Bull, J (eds) 1974, *The Penguin book of English pastoral verse*, Penguin Books, London.
Bates, G 2001, 'Processes and institutional arrangements for resource and environmental management: legal perspectives', in S Dovers & S Wild River (eds), *Processes and Institutions for Resource and Environmental Management: Australian Experiences*, Land and Water Resources Research and Development Corporation, Canberra, pp. 1-36.
Batini, F & Claymore, K 2000, 'Institutional changes affecting integrated management in the Rangelands', paper presented to the Northern Grassy Landscapes conference, Katherine, Northern Territory, 29-31 August.
Becker, E, Jahn, T & Stiess, I 1999, 'Exploring Uncommon Ground', in E Becker & T Jahn (eds), *Sustainability and the Social Sciences*, Zed Books, London, pp. 1-14.
Becker, H 1967, 'Whose side are we on?', *Social Problems*, vol. 14, pp. 239-47.
Beckerman, W 1994, ' "Sustainable development". Is it a useful concept?', *Environmental Values*, vol. 3, pp. 191-209.
Beder, S 1993, *Nature of Sustainable Development*, Scribe Publications, Newham.
Bell, J & Pandey, U 1997, 'The persistence of family labour farm ownership in advanced capitalist economies', in J Lees (ed.), *A legacy under threat? Family farming in Australia*, University of New England Press, Armidale, pp. 213-44.
Bellamy, J 1999, *Evaluation of Integrated Catchment Management in a Wet Tropical Environment: Collected papers of LWRRDC R&D Project CTC7 Volume 1: Synthesis of Findings*, CSIRO Tropical Agriculture, Brisbane.
Bellamy, J, Mayocchi, C & Leitch, A 2002, *Improving Resource Management through Rural Women's Use of New Technology: A pilot study on Impediments and Opportunities for Learning Activities*, CSIRO Sustainable Ecosystems, Brisbane.
Bellamy, J, Ross, H, Ewing, S & Meppem, T 2002, *Integrated Catchment Management: Learning from the Australian Experience for the Murray-Darling Basin*, CSIRO Sustainable Ecosystems, Brisbane.
Bellett, A 1990, *The evolution of societal values compatible with ecological sustainability*, Centre for Resource and Environmental Studies, The Australian National University, Canberra.
Berger, PL & Luckmann, T 1966, *The Social Construction of Reality: A treatise in the sociology of knowledge*, Doubleday, New York.
Beus, CE & Dunlap, RE 1994, 'Endorsement of Agrarian Ideology and Adherence to Agricultural Paradigms', *Rural Sociology*, vol. 59, no. 3, pp. 462-84.
Bjorkhaug, H & Richards, C 2008, 'Multifunctional agriculture in policy and practice? A comparative analysis of Norway and Australia', *Journal of Rural Studies*, vol. 24, pp. 98-111.
Black, A 1999, 'State of the Science on Rural Communities and Rural Social Issues', paper presented to the Country Matters Conference, Canberra, 20-21 May.
Black, A, Duff, J, Saggers, S, Baines, P, Jennings, A & Bowen, P 2000, *Rural Communities and Rural Social Issues: Priorities for Research*, Rural Industries Research and Development Corporation, Canberra.
Black, TR 1993, *Evaluating Social Science Research*, Sage Publications Ltd, London.
Botterill, LC 2000a, 'Government Responses to Farm Poverty: The policy development process', *Rural Society*, vol. 10, no. 1, pp. 15-27.
---- 2000b, 'Rural adjustment and drought policy in Australia', paper presented to Australasian Political Studies Association, Canberra, 3-6 October.
---- 2003, 'Government responses to drought in Australia', in LC Botterill & M Fisher (eds), *Beyond Drought. People, Policy and Perspectives*, CSIRO, Collingwood, pp. 49-66.

---- 2004, 'Valuing Agriculture: Balancing Competing Objectives in the Policy Process', *Journal of Public Policy*, vol. 24, no. 2, pp. 199-218.
Bourke, L 2001a, 'One big happy family? Social problems in rural communities', in S Lockie & L Bourke (eds), *Rurality Bites: The Social and Environmental Transformation of Rural Australia*, Pluto Press, Annandale, pp. 89-102.
---- 2001b, 'Rural communities', in S Lockie & L Bourke (eds), *Rurality Bites: The Social and Environmental Transformation of Rural Australia*, Pluto Press, Annandale, pp. 118-28.
Bourke, L & Lockie, S 2001, 'Rural Australia: An introduction', in S Lockie & L Bourke (eds), *Rurality Bites: The Social and Environmental Transformation of Rural Australia*, Pluto Press, Annandale, pp. 1-14.
Bowler, I 1985, 'Some consequences of the industrialization of agriculture in the European community', in M Healey & B Ilbery (eds), *The industrialization of the countryside*, Geo Books, Norwich, pp. 75-98.
Brandt Commission 1983, *Common Crisis: North-South: cooperation for world recovery*, Pan Books, London.
Brunckhorst, D & Coop, P 1999, 'Environmental and Resource Governance Under the Influence', paper presented to the International Conference on Society and Resource Management, Brisbane, July 1999.
Bryant, L 1999a, *Computers on the Farm*, Rural Industries Research and Development Corporation, Canberra.
---- 1999b, 'The Detraditionalization of Occupational Identities in Farming in South Australia', *Sociologia Ruralis*, vol. 39, no. 2, pp. 236-61.
Bunce, M 1994, *The Countryside Ideal. Anglo-American images of landscape*, Routledge, London.
Burch, WR 1971, *Daydreams and nightmares. A sociological essay on the American environment*, Harper and Row Monograph series in sociology, Harper and Row, New York.
Burling, T 2000, 'Family Woolgrowers in Western Australia: entering Post-modernity?', paper presented to the Sociological Sites/Sights conference, Adelaide, 6-8 December.
Burton, RJ & Wilson, GA 2006, 'Injecting social psychology theory into conceptualisations of agricultural agency: Towards a post-productivist farmer self-identity?', *Journal of Rural Studies*, vol. 22, no. 1, pp. 95-115.
Buttel, FH & Flinn, W 1975, 'Sources and Consequences of Agrarian Values in American Society', *Rural Sociology*, vol. 40, pp. 134-51.
Cameron, D 2005, 'Closer settlement in Queensland: the rise and decline of the agrarian dream - 1860s to the 1960s', in G Davidson & M Brodie (eds), *Struggle Country: The Rural Ideal in Twentieth Century Australia*, Monash University ePress, Melbourne, pp. 1-21.
Campbell, A 1997, 'Facilitating Landcare: Conceptual and Practical Dilemmas', in S Lockie & F Vanclay (eds), *Critical Landcare*, Centre for Rural Social Research, Wagga Wagga, pp. 143-52.
Campbell, D & Fiske, D 1959, 'Convergent and discriminant validity by multitrait-multimethod matrix', *Psychological Bulletin*, vol. 56, pp. 81-105.
Carlson, JE & McLeod, ME 1978, 'A Comparison of Agrarianism in Washington, Idaho, and Wisconsin', *Rural Sociology*, vol. 43, no. 1, pp. 17-30.
Carr, A 1994, 'Grass-roots and green tape: community based environmental management in Australia', Doctoral thesis, Australian National University.
Cary, J, Barr, N, Aslin, H, Webb, T & Kelson, S 2001, *Human and Social Aspects of Capacity to Change to Sustainable Management Practices*, Bureau of Rural Sciences, Canberra.

Cary, J & Holmes, W 1982, 'Relationships among farmers' goals and farm adjustment strategies: some empirics of a multidimensional approach', *Australian Journal of Agricultural Economics*, vol. 26, pp. 112-30.
Cary, JW & Webb, T 2000, *Community Landcare, the National Landcare Program, and the landcare movement: the social dimensions of landcare*, Bureau of Rural Sciences, Canberra.
Cary, JW, Webb, T & Barr, NF 2001, *The adoption of sustainable practices: Some new insights. An analysis of drivers and constraints for the adoption of sustainable practices derived from research*, Land and Water Australia, Canberra.
---- 2002, *Understanding landholders' capacity to change to sustainable practices. Insights about practice adoption and social capacity for change*, Bureau of Rural Sciences, Canberra.
Charmaz, K 2000, 'Grounded Theory. Objectivist and Constructivist Methods', in NK Denzin & YS Lincoln (eds), *Handbook of Qualitative Research*, 2nd edn, Sage Publications, Thousand Oaks, pp. 509-35.
CIE 1997, *Sustainable natural resource management in the rangelands. Report prepared for Department of Primary Industries and Energy*, Centre for International Economics, Canberra.
---- 2000, *The Rangelands: A synthesis of three reports on sustainable natural resource management. Prepared for Agriculture, Fisheries and Forestry - Australia*, Centre for International Economics, Canberra.
Cloke, P & Goodwin, M 1992, 'Conceptualizing Countryside Change: From Post-Fordism to Rural Structured Coherence', *Transactions of the Institute of British Geographers*, vol. 17, no. 3, pp. 321-36.
Cock, G 2001, *Report on Impact. Stage 2 1996-2000 National Property Management Planning Campaign. Building on Stage 1 - 1992-1996*, Agriculture, Fisheries and Forestry - Australia, Canberra.
Cockfield, G & Botterill, LC 2006, 'Rural Adjustment Schemes: Juggling Politics, Welfare and Markets', *Australian Journal of Public Administration*, vol. 65, no. 2, pp. 70-82.
Cocklin, C 2005, 'Natural capital and the sustainability of rural communities', in C Cocklin & J Dibden (eds), *Sustainability and change in rural Australia*, University of New South Wales Press, Sydney, pp. 171-91.
Cocklin, C & Alston, M (eds) 2003, *Community Sustainability in Rural Australia: A Question of Capital?*, Centre for Rural Social Research, Wagga Wagga.
Cocklin, C, Dibden, J & Mautner, N 2003, *Stewards of the Land: landholder perspectives on sustainable land management*, Department of Sustainability and Environment, Melbourne.
---- 2006, 'From market to multifunctionality? Land stewardship in Australia', *The Geographical Journal*, vol. 172, no. 3, pp. 197-205.
Coldwell, I 2007, 'New farming masculinities. "More than just shit-kickers", we're "switched-on" farmers wanting to "balance lifestyle, sustainability and coin".', *Journal of Sociology*, vol. 43, no. 1, pp. 87-103.
Commonwealth of Australia 1995, *Managing for the Future. Report of the Land Management Task Force*, Commonwealth Department of Primary Industries and Energy, Canberra.
---- 1997, *Planning not Patching: An Inquiry into Federal Road Funding*, House of Representatives Standing Committee on Communications, Transport and Microeconomic Reform, Canberra.
---- 2000, *Time running out: Shaping Regional Australia's Future. Report of the inquiry into infrastructure and the development of Australia's regional areas*, Standing Committee on Primary Industries and Regional Services, Parliament of Australia, Canberra.

---- 2001, *Public good conservation: Our challenge for the 21st Century. Interim report of the inquiry into the Effects upon Landholders and Farmers of Public Good Conservation Measures Imposed by Australian Governments*, Standing Committee on Environment and Heritage, House of Representatives, Parliament of Australia, Canberra.
Corbin, J & Strauss, A 1990, 'Grounded Theory Research: Procedures, Canons and Evaluative Criteria', *Qualitative Sociology*, vol. 13, no. 1, pp. 3-21.
Coutts, J 1997, 'Changes in Extension - an Australian perspective', paper presented to the Second Australasian Pacific Extension conference. Managing Change and Building Knowledge and Skills, Albury, 18-21 November 1997.
Cox, K 1996, *Consultation with rural people and their communities*, Rural Community Extension Education Service, Atherton.
Craig, R & Phillips, K 1983, 'Agrarian Ideology in the United States and Australia', *Rural Sociology*, vol. 48, pp. 409-20.
Cullen, P, Williams, J & Curtis, AL 2003, *Landcare Farming. Securing the future for Australian Agriculture*, Landcare Australia, Canberra.
Curry, GN, Koczberski, G & Selwood, J 2001, 'Cashing Out, Cashing In: rural change on the south coast of Western Australia', *Australian Geographer*, vol. 32, no. 1, pp. 109-24.
Curtis, A 1997, 'Landcare, stewardship and biodiversity', in N Klomp & I Hunt (eds), *Frontiers in Ecology. Building the Links*, Elsevier Science, London, pp. 143-54.
Curtis, A & De Lacy, T 1996, 'Landcare in Australia: Does it make a difference?', *Journal of Environmental Management*, vol. 46, no. 46, pp. 119-37.
Curtis, AL & De Lacy, T 1997, 'Examining the Assumptions underlying Landcare', in S Lockie & F Vanclay (eds), *Critical Landcare*, Centre for Rural Social Research, Wagga Wagga, pp. 185-200.
Curtis, AL, Lockwood, M & MacKay, J 2001, 'Exploring Landholder Willingness and Capacity to Manage Dryland Salinity in the Goulburn Broken Catchment', *Australian Journal of Environmental Management*, vol. 8, pp. 79-90.
DAFF 2004, *Consultations on National Drought Policy*, Department of Agriculture, Fisheries and Forestry, Canberra.
---- 2005, *Australian Agriculture and Food Sector*, Department of Agriculture, Fisheries and Forestry, Canberra.
Dale, A & Bellamy, J 1998, *Regional Resource use Planning in Rangelands: an Australian Review*, CSIRO Tropical Agriculture, Canberra.
Dalecki, MG & Coughenour, CM 1992, 'Agrarianism in American Society', *Rural Sociology*, vol. 57, no. 1, pp. 48-64.
Daly, HE & Cobb, JB 1989, *For the Common Good. Redirecting the Economy Toward Community, the Environment, and a Sustainable Future*, Bacon Press, Boston.
Dames & Moore, B 1999, *Baseline evaluation of values, attitudes and behaviour in the Gascoyne-Murchison*, Unpublished report prepared for the Gascoyne-Murchison Management Team and Agriculture Western Australia by URS Australia Pty Ltd, Perth.
Davidson, P & Griffin, RW 2000, *Management. Australia in a Global Context*, John Wiley & Sons Australia, Brisbane.
Davison, G 2005, 'Country life: the rise and decline of an Australian ideal', in G Davison & M Brodie (eds), *Struggle Country: The Rural Ideal in Twentieth Century Australia*, Monash University ePress, Melbourne, pp. 1-15.
DCITA 2008, *Networking the Nation*, Australian Government, viewed 5th May 2008, <www.archive.dcita.gov.au >.
DEH 1992, *National Strategy for Ecologically Sustainable Development*, Department of the Environment and Heratige, Canberra.

Denzin, NK 1970, *The Research Act in Sociology: A Theoretical Introduction to Sociological Methods*, Butterworths, London.
Denzin, NK & Lincoln, YS (eds) 2000, *Handbook of Qualitative Research*, 2nd edn, Sage Publications, Thousand Oaks.
Desert Uplands Build-up and Development Committee 1996, *Position paper: Desert Uplands Build-up and Development Committee. A Paper Identifying the Issues Affecting the Viability and Sustainability of the Population and Land within the Desert Uplands*, Barcaldine.
DEWR 2001, *State of the Environment*, Department of Environment and Water Resources, Canberra.
---- 2006, *State of the Environment*, Department of Environment and Water Resources, Canberra.
Dey, I 1999, *Grounding Grounded Theory. Guidelines for Qualitative Inquiry*, Academic Press, San Diego.
Dibden, J & Cocklin, C 2003, ' "Tarra", Victoria', in C Cocklin & M Alston (eds), *Community Sustainability in Rural Australia*, Centre for Rural Social Research, Wagga Wagga, pp. 170-201.
Dibden, J, Mautner, N & Cocklin, C 2005, 'Land Stewardship: Unearthing the Perspectives of Land Managers', *Australasian Journal of Environmental Management*, vol. 12, pp. 190-201.
Dixon, R 2003, *The Management Task*, Institute of Management Series, Butterworth-Heinemann, Amsterdam.
DNR 1998, *A Guide to Land Tenure in Queensland*, Department of Natural Resources, Brisbane.
DNRM 2001, *Managing State Rural Leasehold Land: a discussion paper*, Department of Natural Resources and Mines, Brisbane.
---- 2003, *Draft State Rural Leasehold Land Strategy*, Department of Natural Resources and Mines, viewed 1st March 2003, <www.nrme.qld.gov.au/land/state/pdf/draft_leasehold_land_mar03.pdf>.
---- 2004, *State Land*, Department of Natural Resources and Mines, viewed 27th October 2004, <www.nrm.qld.gov.au >.
---- 2005, *New vegetation management laws in Queensland - an overview*, Department of Natural Resources and Mines, viewed 19th December 2005, <www.nrm.qld.gov.au >.
DNRMW 2006, *Feral pigs in Queensland. Distribution, ecology and impact*, Department of Natural Resources, Mines and Water, Brisbane.
Dobbs, TL & Pretty, JN 2004, 'Agri-environmental Stewardship Schemes and "Multifunctionality" ', *Review of Agricultural Economics*, vol. 26, no. 2, pp. 220-37.
Dovers, S 1991, 'A cautionary note on constructing sustainable futures', paper presented to the Organising for an Ecologically Sustainable Australia conference, Canberra, 1991.
---- 1992, 'The History of Natural Resource Use in Rural Australia: Practicalities and Ideologies', in G Lawrence, F Vanclay & B Furze (eds), *Agriculture, Environment and Society*, Macmillan, South Melbourne, pp. 1-18.
---- 2000, 'Beyond EverythingCare and EverythingWatch: public participation, public policy and participating publics', paper presented to the International Landcare Conference, Melbourne.
---- 2001, 'Microeconomic Reform and Environmental Management', *Australian Journal of Environmental Management*, vol. 8, pp. 8-9.
Dovers, S & Wild River, S 2001, *Processes and Institutions for Resource and Environmental Management: Australian Experiences*, Land and Water Resources Research and Development Corporation, Canberra.

Dovers, SR & Handmer, JW 1993, 'Contradictions in Sustainability', *Environmental Conservation*, vol. 20, no. 3, pp. 217-22.
Doyle, T & McEachern, D 1998, *Environment and Politics*, Introductions to Environment Series, Routledge, London.
Drummond, I & Marsden, T 1999, *The Condition of Sustainability*, Routledge, London.
Dryzek, J 1997, *The Politics of the Earth*, Oxford University Press, Oxford.
Ekins, P 1993, 'Limits to growth and sustainable development', *Ecological Economics*, vol. 8, pp. 269-88.
---- 2000, 'Accounting for Production and the Environment', in *Economic growth and environmental sustainability: the prospects for green growth*, Routledge, London, pp. 115-53.
England, D 2003, 'Mentoring - a unique change management tool', paper presented to the 1st Australian Farming Systems Conference, Toowoomba, 8-18 September.
Environment Protection Agency 2008, *State of the Environment Queensland 2007*, Environment Protection Agency, Brisbane.
Estes, R 1993, 'Towards Sustainable Development: From Theory to Praxis', *Social Development Issues*, vol. 5, no. 3, pp. 1-29.
Evans, N, Morris, C & Winter, M 2002, 'Conceptualizing agriculture: a critique of post-productivism as the new orthodoxy', *Progress in Human Geography*, vol. 26, no. 3, pp. 313-32.
Ewing, S 1997, 'Small is Beautiful: The Place of the Case Study in Landcare Evaluation', in S Lockie & F Vanclay (eds), *Critical Landcare*, Centre for Rural Social Research, Wagga Wagga, pp. 175-84.
Fairweather, JR & Keating, NC 1994, 'Goals and Management Styles of New Zealand Farmers', *Agricultural Systems*, vol. 44, pp. 181-200.
Fargher, J, Howard, B, Burnside, D & MH, A 2003, 'The Economy of Australian Rangelands - Myth or Mystery?', *The Rangeland Journal*, vol. 25, no. 2, pp. 140-56.
Fensham, RJ & Fairfax, RJ 2003, 'A land management history for central Queensland, Australia as determined from land-holder questionnaire and aerial photography', *Journal of Environmental Management*, vol. 68, no. 4, pp. 409-20.
Fenton, M, MacGregor, C & Cary, J 2000, *Framework and Review of Capacity and Motivation for Change to Sustainable Management Practices*, Final Report, Bureau of Rural Sciences, Canberra.
Finlay, R, Crockett, J & Kemp, D 2005, 'Understanding land managers attitudes using focus groups', *Extension Farming Systems Journal*, vol. 1, no. 1, pp. 15-24.
Fisher, M 1999, 'The Social Sciences and Policy Interface', paper presented to the Country Matters conference, Canberra, 20-21st May.
Flinn, W & Johnson, DE 1974, 'Agrarianism among Wisconsin farmers', *Rural Sociology*, vol. 39, pp. 187-204.
Fontana, A & Frey, J 1994, 'Interviewing: The Art of Science', in N Denzin & Y Lincoln (eds), *Handbook of Qualitative Research*, Sage Publications, Thousand Oaks, pp. 361-76.
Friedland, W 2001, 'Introduction: shaping the new political economy of advanced capitalist agriculture', in W Friedland, L Busch, F Buttel & A Rudy (eds), *Towards a new political economy of agriculture*, Westview Press, Oxford, pp. 1-34.
Gamble, D, Blunden, S & Ramsay, G 2003, 'Sustaining the Family Farm System: An Integrated Approach to Linking the Social Business and Environmental Aspects', paper presented to the 1st Australian Farming Systems conference, Toowoomba, 7-11 September.

Gasson, R 1973, 'Goals and values of farmers', *Journal of Agricultural Economics*, vol. 24, pp. 521-42.
Gasson, R & Errington, A 1993, *The Farm Family Business*, CAB International, Wallingford.
Gergen, KJ 1982, *Toward transformation in social knowledge*, Springer series in social psychology, Springer-Verlag, New York.
---- 1985, 'Social Constructionist Inquiry: Context and Implications', in KJ Gergen & KE Davis (eds), *The Social Construction of the Person*, Springer-Verlag, New York, pp. 3-18.
Gergen, MM & Gergen, KJ 2000, 'Qualitative Inquiry: Tensions and Transformations', in NK Denzin & YS Lincoln (eds), *Handbook of Qualitative Research*, 2nd edn, Sage Publications, Thousand Oaks, pp. 1025-46.
Gerritsen, R 2000, 'The Management of Government and its consequences for service delivery in regional Australia', in B Pritchard & P McManus (eds), *Land of Discontent: The dynamics of change in rural and regional Australia*, University of New South Wales Press, Sydney, pp. 123-39.
Gill, N 2005, 'Life and death in Australian 'heartlands': pastoralism, ecology and rethinking the outback', *Journal of Rural Studies*, vol. 21, pp. 39-53.
Glaser, B 1992, *Basics of grounded theory analysis: Emergence vs forcing*, Sociology Press, Mill Valley.
Glaser, B & Strauss, A 1968, *The Discovery of Grounded Theory*, Weidenfeld and Nicolson, London.
Goffman, E 1989, 'On fieldwork', *Journal of Contemporary Ethnography*, vol. 18, no. 2, pp. 123-32.
Gold, RL 1969, 'Roles in Sociological Field Observation', in GJ McCall & J Simmons (eds), *Issues in Participant Observation*, Addison-Wesley, Reading, pp. 30-9.
Grace, M, Lundin, R & Daws, L 1996, *Working and Networking: Women's Voices from Elsewhere*, Queensland University of Technology, Brisbane.
Gray, I & Lawrence, G 2001, *A Future for Regional Australia: Escaping Global Misfortune*, Cambridge University Press, Cambridge.
Gray, I & Phillips, E 2001, 'Beyond life in the "bush": Australian rural cultures', in S Lockie & L Bourke (eds), *Rurality Bites: The Social and Environmental Transformation of Rural Australia*, Pluto Press, Annandale, pp. 52-9.
Green, A 2001, 'Bush politics: The rise and fall of the Country/National Party', in L Bourke & S Lockie (eds), *Rurality Bites: The Social and Environmental Transformation of Rural Australia*, Pluto Press, Annandale, pp. 60-71.
Greiner, R, Cocklin, C & Gordon, I 2006, *Generating income from ecosystem services: It's a brave new world for landholders around the world. Opportunities for landholders in the Northern Gulf region?*, Northern Gulf Resource Management Group, Townsville.
Gretton, P & Salma, U 1996, *Land degradation and the Australian agricultural industry*, Industry Commission, Canberra.
Griffith, J 2004, 'Live cattle trade prospects', paper presented to the Outlook 2004 conference, Canberra, March, 2004.
Guba, EG & Lincoln, YS 1981, *Effective Evaluation*, Jossey-Bass, San Francisco.
---- 1994, 'Competing Paradigms in Qualitative Research', in NK Denzin & YS Lincoln (eds), *Handbook of Qualitative Research*, Sage Publications, Thousand Oaks, pp. 105-17.
Haberkorn, G, Hugo, G, Fisher, M & Aylward, R 1999, *1999 Country Matters: social atlas of rural and regional Australia*, Bureau of Rural Sciences, Canberra.
Halfacree, K 1999, 'A new space or spatial effacement? Alternative futures for the post-productivist countryside.', in N Walford, J Everitt & D Napton (eds), *Reshaping the*

Country side: Perceptions and processes of Rural Change, CAB International, Wallingford, pp. 14-28.
Halfacree, K & Boyle, P 1998, 'Migration, rurality and the post-productivist countryside', in P Boyle & K Halfacree (eds), *Migration into Rural Areas: Theories and Issues*, John Wiley & Sons, Chichester, pp. 1-20.
Halpin, D & Guilfoyle, A 2004, 'Attributions of Responsibility: Rural Neolibralism and Farmers' Explanations of The Australian Rural Crisis', *Rural Society*, vol. 14, no. 2, pp. 93-111.
Halpin, D & Martin, P 1996, 'Agrarianism and farmer representation: Ideology in Australian agriculture', in G Lawrence, K Lyons & S Momtaz (eds), *Social Change in Rural Australia*, Rural Social and Economic Research Centre, Rockhampton, pp. 9-24.
Hardin, G 1971, 'Tragedy of the Commons', in JR Holdren & PR Ehrlich (eds), *Global Ecology: Readings towards a Rational Strategy for Man*, Harcourt Brace Jovanovich Inc, New York, pp. 167-76.
Harding, R 1998, *Environmental decision-making: the roles of scientists, engineers and the public*, Federation Press, Leichhardt.
Haslam McKenzie, F 2000, 'Where do people fit in the rural equation?', in B Pritchard & P McManus (eds), *Land of Discontent: The dynamics of change in rural and regional Australia*, University of New South Wales Press, Sydney, pp. 73-89.
Held, D 1996, *Models of Democracy*, Polity Press, Cambridge.
Higgins, V 1998, 'Rural bludge or rural disadvantage?', *Arena Magazine*, vol. Feb-March, no. 33, pp. 10-2.
Higgins, V & Lockie, S 2001, 'Getting big and getting out: Government policy, self-reliance and farm adjustment', in S Lockie & L Bourke (eds), *Rurality Bites: The Social and Environmental Transformation of Rural Australia*, Pluto Press, Annandale, pp. 178-90.
---- 2002, 'Re-discovering the social: neo-liberalism and hybrid practices of governing in rural natural resource management', *Journal of Rural Studies*, vol. 18, pp. 419-28.
Hirst, J 1992, 'The Pioneer Legend', in J Carroll (ed.), *Intruders in the Bush. The Australian Quest for Identity*, 2nd edn, Oxford University Press, Melbourne, pp. 14-37.
Holmes, J 1986, 'Mulga, Gidgea and Turkey Bush: Environmental Perception by West Queensland Graziers', paper presented to the Royal Society of Queensland symposium, Brisbane, 18-20th November.
---- 1994, 'Changing Values, Goals, Needs and Expectations of Rangelands Users', *Rangelands Journal*, vol. 16, no. 2, pp. 147-54.
---- 1995, 'Land Tenures, Property Rights, and Multiple Land Use: Issues for American and Antipodean Rangelands', in A Cliff, P Gould, A Hoare & N Thrift (eds), *Diffusing Geography. Essays for Peter Haggett*, Blackwell Publishers, Oxford, pp. 263-88.
---- 2002, 'Diversity and change in Australia's rangelands: a post-productivist transition with a difference?', *Transactions of the Institute of British Geographers*, vol. 27, pp. 362-84.
---- 2006, 'Impulses towards a multifunctional transition in rural Australia: Gaps in the research agenda', *Journal of Rural Studies*, vol. 22, no. 2, pp. 142-60.
Holmes, J & Day, P 1995, 'Identity, Lifestyle and Survival: Value Orientations of South Australian Pastoralists', *Rangelands Journal*, vol. 17, no. 2, pp. 193-212.
Hooper, S, Martin, P, Love, G & Fisher, B 2002, 'Farm Size and Productivity', *Australian Commodities*, vol. 9, no. 3, pp. 495-500.
Hutton, D & Connors, L 1999, *A History of the Australian Environment Movement*, Cambridge University Press, Cambridge.
Ilbery, B & Bowler, J 1998, 'From agricultural productivism to post-productivism', in B Ilbery (ed.), *The geography of rural change*, Longman, London, pp. 57-84.

Illsley, BM 2003, 'Fair participation - a Canadian perspective', *Land Use Policy*, vol. 20, pp. 265-73.
Industry Commission 1997, *A Full Repairing Lease: An Inquiry into Ecologically Sustainable Land Management. Final Report*, Industry Commission, Canberra.
Jary, D & Jary, J 1991, *Dictionary of Sociology*, Harper Collins, Glasgow.
Jick, T 1979, 'Mixing qualitative and quantitative methods: triangulation in action', *Administrative Sciences Quarterly*, vol. 24, pp. 602-11.
Johnsen, S 1999, 'Agricultural Restructuring and Response: Inter-relationships Between Farm Adjustment Strategies in Waihemo 1984-1997', *New Zealand Geographer*, vol. 55, no. 1, pp. 25-34.
Johnston, WR 1982, *The Call of the Land: A History of Queensland to the Present Day*, Jacaranda Press, Brisbane.
Johnstone, PH 1940, 'Old Ideals Versus New Ideas in Farm Life', *Yearbook of Agriculture*, pp. 111-70.
Kellow, A & Niemeyer, S 1999, 'The Development of Environmental Administration in Queensland and Western Australia: Why are they Different?', *Australian Journal of Political Science*, vol. 34, no. 2, pp. 205-22.
Kelly, D 2001, *Community Participation*, Rural and Industries Research and Development Corporation, Canberra.
Kemp, D, Girdwood, J, Parton, K & Charry, A 2004, 'Farm Management: rethinking direction?', *Australasian Farm Business Management Journal*, vol. 1, no. 1, pp. 36-44.
Keogh, K, Frazer, B & Chant, D 2006, *Review of arrangements for regional delivery of natural resource management programmes*, Department of Agriculture, Fisheries and Forestry and Department of the Environment and Water Resources, Canberra.
Kerridge, K 1978, 'Value orientations and farmer behaviour - an exploratory study', *Quarterly Review of Agricultural Economics*, vol. 31, no. 1, pp. 61-72.
Kingma, O, Crellin, I & Hoitink, R 1999, 'Social Issues in Australia's Agricultural Industries', paper presented to the Country Matters conference, Canberra, 20-21st May.
Kingwell, R 2002, 'Issues for Farm Management in the 21st Century', *Agribusiness Review*, vol. 10, no. Paper 6.
Kraatz, M, Sullivan, S, Tapsall, S, Tubman, W & O'Donnell, K 2006, *Perspectives on managing grazing country: Graziers talk about successfully managing their country, Northern Gulf region*, Tropical Savannas CRC, Darwin.
Kvale, S 1996, *Interviews: an introduction to qualitative research interviewing*, Sage Publications, Thousand Oaks.
Lamond, D 1998, 'Back to the future: Lessons from the past for a new management era', in G Griffin (ed.), *Management Theory and Practice. Moving to a New Era*, Macmillan Education Australia Pty Ltd, Melbourne, pp. 3-14.
Landsberg, RG 2000, 'Requirements for sustainable management of a pastoral enterprise in north Queensland', *Savanna Links*, no. 13, pp. 1-4.
Lawrence, D, Graham, T & Clark, R 1994, 'Sustainable grazing management: Graziers' perspectives and implication for pasture management in the Maranoa region, south Queensland', *Tropical Grasslands*, vol. 28, no. 1, pp. 24-31.
Lawrence, D, Jordan, D, Henry, D & Lesleighter, L 1994, *Factors influencing graziers' decisions on sustainable grazing management*, Department of Primary Industries, Brisbane.
Lawrence, D, Jordan, D & Lawley, M 1997, *Stocking rates and factors influencing stocking rate decisions*, Department of Primary Industries, Brisbane.
Lawrence, G 1987, *Capitalism and the Countryside*, Pluto Press, Sydney.

---- 2005, 'Globalisation, agricultural production systems and rural restructuring', in C Cocklin & J Dibden (eds), *Sustainability and Change in Rural Australia*, University of New England Press, Sydney, pp. 104-20.
Lawrence, G & Gray, I 2000, 'The Myths of Modern Agriculture: Australian Rural Production in the 21st Century', in B Pritchard & P McManus (eds), *Land of Discontent: The dynamics of change in rural and regional Australia*, University of New South Wales Press, Sydney, pp. 33-51.
Lees, J 1997a, 'The origins of the legacy', in J Lees (ed.), *A legacy under threat? Family farming in Australia*, University of New England Press, Armidale, pp. 1-14.
---- (ed.) 1997b, *A Legacy Under Threat? Family farming in Australia*, University of New England Press, Armidale.
Lele, SM 1991, 'Sustainable Development. A critical review', *World Development*, vol. 19, no. 6, pp. 607-21.
Lesslie, R, Hill, M, Dawson, S & Smith, J 2006, *Towards Sustainability for Australia's Rangelands. Analysing the options*, Department of Agriculture, Fisheries and Forestry, Canberra.
Liepins, R 1998, 'Fields of Action: Australian Women's Agricultural Activism in the 1990s', *Rural Sociology*, vol. 63, no. 1, pp. 128-56.
Lincoln, YS & Guba, EG 1985, *Naturalistic Inquiry*, Sage Publications, Newbury Park.
Lindesay, JA 2003, 'Climate and drought in Australia', in L Botterill & M Fisher (eds), *Beyond Drought. People, Policy and Perspectives*, CSIRO Publishing, Collingwood, pp. 21-48.
Lindsay, R & Gleeson, T 1997, 'Changing Structure of Farming', *ABARE Current Issues*, vol. 4, pp. 1-7.
Lloyd, A & Malcolm, B 1997, 'Agriculture and the family farm in the economy', in J Lees (ed.), *A legacy under threat? Family farming in Australia*, University of New England Press, Armidale, pp. 59-80.
Lockie, S 1997, 'Beyond a 'Good Thing': Political Interests and the Meaning of Landcare', in S Lockie & F Vanclay (eds), *Critical Landcare*, Centre for Rural Social Research, Wagga Wagga, pp. 29-44.
---- 1998, 'Environmental and social risks, and the construction of "best practice" in Australian agriculture', *Agriculture and Human Values*, vol. 15, pp. 243-52.
---- 2001, 'Agriculture and environment', in S Lockie & L Bourke (eds), *Rurality Bites: The Social and Environmental Transformation of Rural Australia*, Pluto Press, Annandale, pp. 229-42.
Lockie, S & Bourke, L (eds) 2001, *Rurality Bites: The Social and Environmental Transformation of Rural Australia*, Pluto Press, Annandale.
Lockie, S, Higgins, V & Lawrence, G 2001, 'What's Social About Natural Resources and Why do we Need to Theorise it?', in G Lawrence, V Higgins & S Lockie (eds), *Environment, Society and Natural Resource Management: Theoretical Perspectives from Australasia and the Americas*, Edward Elgar, Cheltenham, UK.
Lowe, P 1989, 'The rural idyll defended: from preservation to conservation', in G Mingray (ed.), *The Rural Idyll*, Routledge, London, pp. 113-31.
Lowe, P, Murdoch, J, Marsden, T, Munton, R & Flynn, A 1993, 'Regulating the New Rural Spaces: the Uneven Development of Land', *Journal of Rural Studies*, vol. 9, no. 3, pp. 205-22.
MacLeod, ND & McIvor, J 2003, 'Reconciling economic and ecological conflicts for sustained management of grazing lands', paper presented to the 7th International Rangelands Congress, Rangelands in the New Millennium, Durban, South Africa, 26 July-1 August.

MacLeod, ND & Taylor, JA 1992, 'Sustainable grazing practices in Queensland', *The Australian Farm Manager*, vol. 3, no. 6, pp. 6-9.
Manchester Metropolitan University 2004, *Encyclopedia of the Atmospheric Environment*, Manchester Metropolitan University, viewed 23rd February 2008, <http://www.ace.mmu.ac.uk/eae/Climate/Older/Tropical_Climate.html>.
Marsden, T 2003, *The condition of rural sustainability*, Royal Van Gorcum, Assen.
Marsden, T, Murdoch, J, Lowe, P, Munton, R & Flynn, A 1993, *Constructing the Countryside. Restructuring rural areas 1*, UCL Press, London.
Martin, P 1997, 'The Constitution of Power in Landcare: A Post-Structuralist Perspective with Modernist Undertones', in S Lockie & F Vanclay (eds), *Critical Landcare*, Centre for Rural Social Research, Charles Sturt University., Wagga Wagga, pp. 45-56.
Martin, P & Halpin, D 1998, 'Landcare as a Politically Relevant New Social Movement?', *Journal of Rural Studies*, vol. 14, no. 4, pp. 445-57.
Martin, P & Woodhill, J 1995, ' "Landcare in the Balance": Government Roles and Policy Issues in Sustaining Rural Environments.', *Australian Journal of Environmental Management*, vol. 2, pp. 173-83.
Mason, J 1996, *Qualitative Researching*, Sage Publications Ltd, London.
Maybery, D, Crase, L & Gullifer, C 2005, 'Categorising farming values as economic, conservation and lifestyle', *Journal of Economic Psychology*, vol. 26, no. 1, pp. 59-72.
McColl, J, Donald, R & Shearer, C 1997, *Rural Adjustment: Managing Change. Mid-term review of the Rural Adjustment Scheme*, Department of Industries and Energy, Canberra.
McEvoy, D & Ravetz, J 2001, 'Toolkits for regional sustainable development', *Impact Assessment and Project Appraisal*, vol. 19, no. 2, pp. 90-3.
McGregor, MM, Willock, J, Dent, B, Deary, IJ, Sutherland, A, Gibson, G, Morgan, O & Grieve, B 1996, 'Links between psychological factors and farmer decision making', *Farm Management*, vol. 9, no. 5, pp. 228-39.
McManus, P 1996, 'Contested Terrains: Politics, Stories and Discourses of Sustainability', *Environmental Politics*, vol. 5, no. 1, pp. 48-73.
McMichael, P & Lawrence, G 2001, 'Globalising agriculture: Structures of constraint for Australian farming', in S Lockie & L Bourke (eds), *Rurality Bites: The Social and Environmental Transformation of Rural Australia*, Pluto Press, Annandale, pp. 153-64.
Meadows, D, Meadows, D, Randers, J & Behrens, W 1972, *The Limits to Growth*, Universe Books, New York.
Meat and Livestock Australia 2005, *Beef from farm to market*, Meat and Livestock Australia, Sydney.
Miles, M & Huberman, A 1994, *Qualitative Data Analysis*, Sage Publications Ltd, London.
Minichiello, V, Aroni, R, Timewell, E & Alexander, L 1995, *In-Depth Interviewing*, 2nd edn, Longman, Melbourne.
Mobbs, C & Dovers, S 1999, *Social, Economic, Legal, Policy and Institutional R&D for Natural Resource Management: Issues and Directions for LWRRDC*, Occasional Paper No 01/99, Centre for Resource and Environmental Studies, The Australian National University, Canberra.
Moffatt, J 2007, *Engagement Protocol. How to approach people in the Gulf if their assistance is needed*, Northern Gulf Resource Management Group Ltd, Georgetown.
Molnar, JJ & Wu, LS 1989, 'Agrarianism, Family Farming, and Support for State Intervention in Agriculture', *Rural Sociology*, vol. 54, no. 2, pp. 227-45.
Montmarquet, JA 1989, *The Idea of Agrarianism: from hunter-gatherer to agrarian radical in Western Culture*, University of Idaho Press, Moscow.

Mooney, PH 1988, *My Own Boss? Class, Rationality and the Family Farm*, The Rural Studies Series of the Rural Sociological Society, Westview Press, Boulder.
Moore, K 2000, 'Putting People in the Picture 2: Social Science and Humanities Research for Natural Resource Management', *Australian Journal of Environmental Management*, vol. 7, pp. 70-2.
Moore Stephens 2005, *Rural Debt in Queensland. Survey results 2005*, for Queensland Rural Adjustment Authority, Brisbane.
Morrison, TH, McDonald, GT & Lane, MB 2004, 'Integrating natural resource management for better environmental outcomes', *Australian Geographer*, vol. 35, no. 3, pp. 243-58.
Mullen, J 2002, 'Farm Management in the 21st Century', *Agribusiness Review*, vol. 10, no. Paper 5.
Murdoch, J, Lowe, P, Ward, N & Marsden, T 2003, *The Differentiated Countryside*, Routledge, London.
National Native Title Tribunal 2004a, *Native title on pastoral and agricultural leases*, National Native Title Tribunal, viewed 10th January 2005, <www.nntt.gov.au/publications/data/files>.
---- 2004b, *Pastoral leases - changes in use and renewals*, National Native Title Tribunal, viewed 10th January 2005, <www.nntt.gov.au/publications/data/files>.
Nelson, R, Alexander, F, Elliston, L & Blias, A 2004, *Natural Resource Management on Australian Farms*, Australian Bureau of Agricultural and Resource Economics, Canberra.
Neuman, WL 1994, *Social Research Methods*, Allyn and Bacon, Boston.
NLWRA 2001, *Dryland Salinity in Australia*, Natural Heritage Trust, Canberra.
---- 2002, *Australians and Natural Resource Management 2002*, Land and Water Australia, Canberra.
Norbury, G, Norbury, D & Hacker, R 1993, 'Impact of red kangaroos on the pasture layer in the Western Australian arid Zone', *Australian Rangelands Journal*, vol. 15, no. 1, pp. 12-23.
O' Meagher, B 2003, 'Economic aspects of drought and drought policy', in LC Botterill & M fisher (eds), *Beyond Drought. People, Policy and Perspectives*, CSIRO, Collingwood, pp. 109-30.
Olesen, V 1994, 'Feminisms and Models of Qualitative Research', in N Denzin & Y Lincoln (eds), *Handbook of Qualitative Research*, Sage Publications, London.
Patterson, ME & Williams, DR 1998, 'Paradigms and Problems: The Practice of Social Science in Natural Resource Management', *Society and Natural Resources*, vol. 11, pp. 279-95.
Pearce, DW 1993, *Blueprint. Measuring sustainable development 3*, Earthscan, London.
---- 2008, 'Sustainable development and Developing country economies', in RK Turner (ed.), *Sustainable Environmental Economics and Management*, Belhaven Press, London, pp. 72-105.
Pearce, DW, Markandya, A & Barbier, EB 1989, *Blueprint for a green economy*, Earthscan Publications Ltd, London.
Plein, C, Green, KE & Williams, DG 1998, 'Organic planning: a new approach to public participation in local governance', *The Social Science Journal*, vol. 35, no. 4, pp. 509-19.
Poiner, G 1990, *The Good Old Rule*, Sydney University Press, Sydney.
Potter, C & Burney, J 2002, 'Agricultural multifunctionality in the WTO – legitimate non-trade concern or disguised protectionism?', *Journal of Rural Studies*, vol. 18, no. 1, pp. 35-47.

Pritchard, B 2000, 'Negotiating the Two-Edged Sword of Agricultural Trade Liberalisation: Trade Policy and its Protectionist Discontents', in B Pritchard & P McManus (eds), *Land of Discontent: The dynamics of change in rural and regional Australia*, University of New South Wales Press, Sydney, pp. 90-104.
Pritchard, B & McManus, P (eds) 2000, *Land of Discontent: The dynamics of change in rural and regional Australia*, University of New South Wales Press, Sydney.
Productivity Commission 1999a, *Impact of Competition Policy Reforms on Rural and Regional Australia*, AusInfo, Canberra.
---- 1999b, *Implementation of Ecologically Sustainable Development by Commonwealth Departments and Agencies*, Productivity Commission, Canberra.
---- 2002, *Pastoral Leases and Non-Pastoral Land Use*, Commissioned Research Paper, AusInfo, Canberra.
Pusey, M 1991, *Economic Rationalism in Canberra: A nation building state changes its mind*, Cambridge University Press, New York.
Queensland Rural Adjustment Authority 2004, *FarmBis*, Queensland Rural Adjustment Authority, Brisbane.
Redclift, M 1991, 'The Multiple Dimensions of Sustainable Development', *Geography*, vol. 76, no. 330, pp. 36-42.
---- 1994, 'Sustainable Development: Economics and the Environment', in M Redclift & C Sage (eds), *Strategies for Sustainable Development. Local Agendas for the South*, John Wiley & Sons, Chichester, pp. 17-34.
---- 2001, 'Environmental security and the recombinant human', *Environmental Values*, vol. 10, pp. 289-99.
Redclift, M & Sage, C 1994, 'Introduction', in M Redclift & C Sage (eds), *Strategies for Sustainable Development. Local Agendas for the South*, John Wiley & Sons, Chichester, pp. 1-16.
Reeve, I 2001a, *Australian Farmers' Attitudes to Rural Environmental Issues: 1991-2000*, Institute for Rural Futures, University of New England, Armidale.
---- 2001b, 'Utopias of transformation and integration: a history of future landscapes in rural Australia', paper presented to the 2nd International conference on Landscape Futures, Armidale, 4-6 December.
Reeve, I, Frost, L, Musgrave, W & Stayner, R 2001, *Overview Report. Agriculture and Natural Resource Management in the Murray-Darling Basin: A Policy History and Analysis*, Institute for Rural Futures, University of New England, Armidale.
Reid, D 1995, *Sustainable Development: An Introductory Guide*, Earthscan Publications Ltd, London.
Reinhardt, N & Bartlett, P 1989, 'The Persistence of Family Farms in United States Agriculture', *Sociologia Ruralis*, vol. 29, pp. 203-25.
Resource Consulting Service 2008, *Resource Consulting Service - leading the way in farming*, Resource Consulting Service, Australia, viewed 8th May 2008, <www.rcs.com.au >.
Richards, C & Richards, T 2000, *QSR NVivo*, 7 edn, QSR International Pty Ltd, Melbourne.
Rickson, RE, Saffigna, P & Sanders, R 1999, 'Farm work satisfaction and acceptance of sustainability goals by Australian organic and conventional farmers', *Rural Sociology*, vol. 64, no. 2, pp. 266-78.
Rickson, ST & Daniels, PL 1999, 'Rural women and decision making: Women's role in resource management during rural restructuring', *Rural Sociology*, vol. 64, no. 2, pp. 234-50.
Rieu, E 1954, *Virgil. The pastoral poems.*, Penguin Books, Harmondsworth.
Riley, D, Gleeson, T, Martin, P, Hooper, S & Shafron, W 2002, *Australian Beef Industry 2002*, Australian Bureau of Agricultural and Resource Economics, Canberra.

Ritter, ME 2003, *The Physical Environment, an introduction to Physical Geography*, viewed 7th January 2005, <www.uwsp.edu.geo/faculty/ritter/geog101/textbook/climate_systems/tropical_wetdry_.html>.
RM Consulting Group 2006, *Evaluation of sustainable agricultural outcomes from regional investment (NAP and NHT). Final report*, for Department of the Environment and Heritage and Department of Agriculture, Fisheries and Forestry, Canberra.
Roberts, K, Hossain, D, Fell, R, Clark, R & Coutts, J 1998, *Benchmarking and Interpretation of Attitudes, Practices and Information Use of Tropical Savannas Users, and Managers*, Rural Extension Centre, University of Queensland, Gatton.
Robinson, NA 1992, 'Agenda 21 and the UNCED proceedings', paper presented to the United Nations Conference on Environment and Development, Stockholm.
Rural Management Partners 2004, *Economic assessment of the impact of dingoes/wild dogs in Queensland*, for Department of Natural Resources and Mines, Brisbane.
Salamon, S & Davis-Brown, K 1986, 'Middle-range farmers persisting through the agricultural crisis', *Rural Sociology*, vol. 54, no. 4, pp. 503-12.
Sanoff, H 2000, *Community Participation Methods in Design and Planning*, John Wiley & Sons Inc., New York.
Sarkissian, W, Cook, A & Walsh, K 1997, *Community Participation in Practice. A Practical Guide*, Institute for Science and Technology Policy, Perth.
Schwandt, T 1994, 'Constructivist, Interpretivist Approaches', in NK Denzin & Y Lincoln (eds), *Handbook of Qualitative Research*, Sage Publications, Thousand Oaks, pp. 118-37.
---- 2000, 'Three Epistemological Stances for Qualitative Inquiry', in NK Denzin & YS Lincoln (eds), *Handbook of Qualitative Research*, 2nd edn, Sage Publications, Thousand Oaks, pp. 189-214.
Schwarzweller, H & Davidson, AP 1997, 'Perspectives on Regional and Enterprise Marginality: Dairying in Michigan's North Country', *Rural Sociology*, vol. 62, pp. 157-79.
Scott, K, Park, J & Cocklin, C 2000, 'From 'sustainable rural communities' to 'social sustainability': giving voice to diversity in Mangakahia Valley, New Zealand', *Journal of Rural Studies*, vol. 16, pp. 433-46.
Seabrook, L, McAlpine, C & Fensham, RJ 2006, 'Cattle, crops and clearing: Regional drivers of landscape change in the Brigalow Belt, Queensland, Australia, 1840-2004', *Landscape and Urban Planning*, vol. 78, pp. 373-85.
Seale, C 2004, *Social research methods: a reader*, Routledge, London.
Short, JR 1991, *Imagined Country. Society, Culture and Environment*, Routledge, London.
Shrapnel, M 2002, 'Bushies and Cockies - Beyond the Myths: The Personalities of our Outback Land Managers', Masters thesis, University of Queensland.
Shrapnel, M & Davie, J 2001, 'The influence of personality in determining farmer responsiveness to risk', *Journal of Agricultural Education*, vol. 7, no. 3, pp. 167-78.
Shucksmith, M 1993, 'Farm Household Behaviour and the Transition to Post-productivism', *Journal of Agricultural Economics*, vol. 44, no. 3, pp. 466-78.
Shulman, AD & Penman, R 1994, 'Why Study Rangeland Values? Some Practices that Scientists have much to answer for', *Rangelands Journal*, vol. 16, no. 2, pp. 265-72.
Singer, EG & De Sousa, ISF 1983, 'The Sociopolitical Consequences of Agrarianism Reconsidered', *Rural Sociology*, vol. 48, no. 2, pp. 290-307.
Slee 2005, 'From countrysides of production to countrysides of consumption', *Journal of Agricultural Science*, vol. 143, pp. 255-65.

Smailes, P 1997, 'Socio-economic Change and Rural Morale in South Australia, 1982-1993', *Journal of Rural Studies*, vol. 13, no. 3, pp. 17-42.
Smart, B 2003, *Economy, Culture and Society*, Theorizing Society, Open University Press, Buckingham.
Smith, JP 1982, 'Agrarian Ideology and Region: The Persistence of Two Variants', *The Rural Sociologist*, vol. 2, pp. 282-94.
Spradley, J 1980, *Participant Observation*, Thomson Learning Inc., Melbourne.
Stafford Smith, DM, McKeon, GM, Watson, IW, Henry, BK, Stone, GS, Hall, WB & Howden, SM 2007, 'Learning from episodes of degradation and recovery in variable Australian rangelands', *Proceedings of the National Academy of Sciences*, vol. 104, no. 52, pp. 20690-5.
Stafford Smith, M & Abel, N 2001, 'Rangeland Institutions Over Time and Space', in S Dovers & S Wild River (eds), *Process and Institutions for Resource and Environmental Management: Australian Experiences*, Land and Water Australia, Canberra, pp. 1-16.
Stafford Smith, M, Morton, S & Ash, A 1997, 'On the future of pastoralism in Australia's rangelands', in N Klomp & I Lunt (eds), *Frontiers in Ecology*, Elsevier Science, Oxford, pp. 7-16.
---- 2000, 'Towards sustainable Pastoralism in Australia's Rangelands', *Australian Journal of Environmental Management*, vol. 7, pp. 190-203.
Stehlik, D, Gray, I & Lawrence, G 1999, *Drought in the 1990's. Australian Farm Families' Experiences*, Rural Industries Research and Development Corporation.
Stewart, JW 1996, 'Savanna Users and Their Perspectives: Grazing Industry', in A Ash (ed.), *The Future of the Tropical Savannas: An Australian Perspective*, CSIRO Publishing, Collingwood, pp. 47-53.
Stoneham, G, Eigenraam, M, Ridley, A & Barr, N 2003, 'The application of sustainability concepts to Australian agriculture: an overview', *Australian Journal of Experimental Agriculture*, vol. 43, no. 3, pp. 195-203.
Stothers, K 2000, 'Native grasslands and grassy woodlands: landholders' attitudes and incentives for conservation on private property', in JL Craig, N Mitchell & DA Saunders (eds), *Nature Conservation 5: Conservation in Production Environments: Managing the Matrix*, Beatty & Sons, Sydney, pp. 511-22.
Strauss, A & Corbin, J 1990, *The Basics of Qualitative Research*, Sage Publications, California.
---- 1994, 'Grounded Theory Methodology: An Overview', in N Denzin & Y Lincoln (eds), *Handbook of Qualitative Research*, Sage Publications, London.
Swift, R 2002, *The No-Nonsense Guide to Democracy*, Verso Books, London.
Synapse Consulting Pty Ltd 1998, *Farmer Education and Training: Issues for Research and Development*, Rural Industries Research and Development Corporation, Canberra.
Tanewski, GA, Romano, CA & Smyrnois, K 2000, *Determinants of Australian Family Farm Growth. The role of Owner Characteristics and Strategic Planning*, Rural Industries Research and Development Corporation, Canberra.
Taylor, JA 2002, 'Key Personal Attributes and Areas of Knowledge for Future Success in the Rangelands', paper presented to the Australian Rangeland Society conference, Kalgoolie, 2-5 September.
---- 2003, 'Building capacity in Australia's Rangelands', paper presented to the VIIth International Rangelands Congress, Durban, South Africa, 26th July-1st August 2003.
Taylor, JA & Braithwaite, R 1996, 'Interactions between land uses in Australia's Savannas - It's largely in the mind!', in A Ash (ed.), *The Future of Tropical Savannas: An Australian Perspective*, CSIRO, Canberra, pp. 107-18.

Tedlock, B 2000, 'Ethnography and Ethnographic Presentation', in NK Denzin & YS Lincoln (eds), *Handbook of Qualitative Research*, 2nd edn, Sage Publications, Thousand Oaks, pp. 455-86.
Tonts, M 2000, 'The Restructuring of Australia's Rural Communities', in B Pritchard & P McManus (eds), *Land of Discontent: The dynamics of change in rural and regional Australia*, University of New South Wales Press, Sydney, pp. 52-72.
---- 2005, 'Government policy and rural sustainability', in C Cocklin & J Dibden (eds), *Sustainability and Change in Rural Australia*, University of New South Wales Press, Sydney, pp. 194-211.
Tonts, M & Black, A 2002, *The Impact of Changing Farm Business Structures on Rural Communities*, Rural Industries Research and Development Corporation, Canberra.
---- 2003, 'Narrogin, Western Australia', in C Cocklin & M Alston (eds), *Community Sustainability in Rural Australia*, Centre for Rural Social Research, Wagga Wagga, pp. 107-34.
Tonts, M & Greive, S 2002, 'Commodification and Creative Destruction in the Australian Rural Landscape: The Case of Bridgetown, Western Australia', *Australian Geographical Studies*, vol. 40, no. 1, pp. 58-70.
Tonts, M & Jones, R 1996, 'Rural restructuring and uneven development in the Western Australian wheatbelt', in G Lawrence, K Lyons & S Momtaz (eds), *Social Change in Rural Australia*, Central Queensland University, Rockhampton, pp. 139-53.
Tothill, J & Gillies, C 1992, *The pasture lands of northern Australia: their condition, productivity and sustainability*, Tropical Grassland Society of Australia, Brisbane.
Toyne, P & Farley, R 2000, *The Decade of Landcare: Looking backward - looking forward*, Discussion Paper 30, The Australia Institute, Canberra.
Travers, M 2001, *Qualitative Research Through Case Studies*, Introducing Qualitative Methods, Sage Publications, London.
TS CRC 2005a, *Gulf Country*, Cooperative Research Centre for Tropical Savannas Management, viewed 11th November 2005, <www.savanna.cdu.edu.au >.
---- 2005b, *Mitchell Grasslands*, Cooperative Research Centre for Tropical Savannas Management, viewed 11th November 2005, <www.savanna.cdu.edu.au >.
Tully, J 1966, 'Towards a Sociological Theory for Extension', *Human Relations*, vol. 19, no. 4, pp. 391-403.
Turner, R 1993, 'Sustainability: Principles and Practice', in R Turner (ed.), *Sustainable Environmental Economics and Management*, Belhaven Press, London, pp. 3-36.
Turner, RK, Pearce, DW & Bateman, I 1993, *Environmental Economics. An Elementary Introduction*, The John Hopkins University Press, Baltimore.
Valentine, G 1997, 'A Safe Place to Grow Up? Parenting, Perceptions of Children's Safety and the Rural Idyll', *Journal of Rural Studies*, vol. 13, no. 2, pp. 137-48.
Vanclay, F 1986, 'Socio-economic correlates of adoption of soil conservation technology', Master of Social Science thesis, University of Queensland.
---- 1992, 'Barriers to Adoption: a general overview of the issues', *Rural Society*, vol. 20-21, no. 2, pp. 1-4.
---- 2004, 'Social principles for agricultural extension to assist in the promotion of natural resource management', *Australian Journal of Experimental Agriculture*, vol. 44, no. 3, pp. 213-22.
Vanclay, F & Lawrence, G 1995, *The Environmental Imperative: Eco-Social Concerns for Australian Agriculture*, Central Queensland University Press, Rockhampton.
Voyce, M 1997, 'Inheritance and family farm ownership', in J Lees (ed.), *A legacy under threat? Family farming in Australia*, University of New England Press, Armidale, pp. 199-212.

Walford, N 2003, 'Productivism is allegedly dead, long live productivism. Evidence of continued productivist attitudes and decision-making in South-East England', *Journal of Rural Studies*, vol. 19, pp. 491-502.
Walford, N, Everitt, J & Napton, D (eds) 1999, *Reshaping the Countryside: Perceptions and processes of Rural Change*, CABI Publishing, Wallingford.
Ward, N 1993, 'The agricultural treadmill and the rural environment in the post-productivist era', *Sociologia Ruralis*, vol. 33, no. 3/4, pp. 348-64.
WCED 1987, *Our Common Future*, Oxford University Press, Oxford.
Wear, R 2000, 'Countrymindedness Revisited', paper presented to the Australian Political Studies Association, Canberra, 3-6 October.
Webb, T, Cary, J & Geldens, P 2002, *Leaving the Land: A study of Western Division grazing families in transition*, Rural Industries Research and Development Corporation, Canberra.
Wilbanks, TJ 1994, ' "Sustainable Development" in Geographic Perspective', *Annals of the Association of American Geographers*, vol. 84, no. 4, pp. 541-56.
Wilkinson, KP 1986, 'In Search of the Community in the Changing Countryside', *Rural Sociology*, vol. 51, no. 1, pp. 1-17.
Williams, J & Saunders, D 2005, 'Land use and ecosystems', in J Goldie, B Douglas & B Furnass (eds), *In Search of Sustainability* CSIRO Publishing, Canberra, pp. 61-78.
Williams, R 1973, *The country and the city*, Chatto and Windus, London.
Willits, FK, Beler, RC & Timbers, VL 1990, 'Popular Images of "Rurality": Data from a Pennsylvania Survey', *Rural Sociology*, vol. 55, no. 4, pp. 559-78.
Wilson, GA 2001, 'From productivism to post-productivism ... and back again? Exploring the (un)changed natural and mental landscapes of European agriculture', *Transactions of the Institute of British Geographers*, no. 26, pp. 77-102.
---- 2004, 'The Australian *Landcare* movement: towards 'post-productivist' rural governance?', *Journal of Rural Studies*, vol. 20, pp. 461-84.
Wilson, GA & Hart, K 2000, 'Financial imperative or conservation concern? EU farmers' motivations for participation in voluntary agri-environmental schemes', *Environment and Planning A*, vol. 43, pp. 2161-85.
Wilson, GA & Rigg, J 2003, ' "Post-productivist" agricultural regimes and the South: Discordant concepts?', *Progress in Human Geography*, vol. 27, no. 6, pp. 681-707.
Woodhill, J 1999, 'Sustaining Rural Australia: A Political Economic Critique of Natural Resources Management', Doctoral thesis, Australian National University.
Woods, M 2004, 'Globalisation, Hybridisation and Rural Resistance: Contesting the Global Countryside', paper presented to the School of Social Science Seminar Series, University of Queensland, Brisbane, 11th October.
Wright, V & Kaine, G 1997, 'Economic and market forces influencing farm land ownership', in J Lees (ed.), *A legacy under threat? Family farming in Australia*, University of New England Press, Armidale, pp. 81-98.
Yin, RK 2003, *Case Study Research: Design and Methods*, 3rd edn, Applied Social Research Methods Series, Sage Publications, Thousand Oaks.
Young, M & Hajkowicz, S 2000, *Methodological reviews of NRM assessment techniques. Social and Institutional Research Program. Project Seminar and Workshop*, Land and Water Resources Research and Development Corporation, Canberra, 2000.

Appendices

Appendix A – Information Sheet and Consent Form

Information Sheet

Rural Sustainability Study

I, Jenny Moffatt, am conducting this study towards the Doctor of Philosophy degree at the University of Queensland, Gatton. My primary supervisor is Professor Helen Ross, University of Queensland. My associate supervisors are Professor John Taylor, Rangelands Australia and Professor Geoff Lawrence, University of Queensland. The study is part-funded by the Tropical Savannas Management Cooperative Research Centre.

The purpose of this study is to understand graziers' perspectives on rural sustainability and the constraints and barriers to this created by government policy and practice in order to produce recommendations about how a better match can be made between graziers' perspectives and government policy, towards rural sustainability.

I would like to ask graziers and people who influence graziers about their views on the social, economic and ecological aspects of rural sustainability, on audio-tape. I would like to stay with *current* grazing families on their property briefly, to develop an in-depth understanding. This would give me the opportunity to observe and be a part of daily life, to build a picture of each family on each property and ultimately build a picture of graziers' perspectives. I will ask to be referred on to another grazing family, either similar or different to yourself. This would help ensure that I talk with a broad cross-section of graziers. I would like to take some photos of the property for use in the discussions. I would like to talk to *retired* graziers either by telephone or in-person at a mutually convenient location, on audio-tape if in-person. I would like to ask government officials, members of non-government organisations and those who play a significant role in their community about the constraints and enabling factors regarding rural sustainability, on audio-tape.

Although there may not be any direct benefit to participation the information will contribute to an increased knowledge of graziers' perspectives. Involvement is voluntary and participants may withdraw without consequence at any time. All information will be anonymous and confidential through the use of codes and will only be used for research purposes. If, at the completion of data analysis clarification or more information is required, some participants will be asked for further information. All study participants will be provided with a transcript or audio-tape of their contribution and a summary of the study findings on request.

If you would like further information please contact me, Jenny Moffatt on 07/5460 1321, or 0422 183 011, or Professor Helen Ross on 07/5460 1648. The study has been cleared by one of the Human Ethics Committees of the University of Queensland in accordance with the National Health and Medical Research Council's guidelines. If you would like to speak to an officer of the University not involved in the study you may contact the Ethics Officer on 07/3365 3924.

Consent Form

Rural Sustainability Study

Jenny Moffatt is conducting this study as part of her PhD and is being supervised by Professor Helen Ross. The purpose of this study is to understand graziers' perspectives on rural sustainability and the constraints and barriers to this created by government policy and practice. The study will recommend how a better match can be made between graziers' perspectives and government policy, towards rural sustainability.

I would like to ask graziers and people who influence graziers, about their views on the social, economic and ecological aspects of rural sustainability, on audio-tape. I would like to stay with *current* grazing families on their property briefly to develop an in-depth understanding. This would give me the opportunity to observe and be a part of daily life, to build a picture of each family on each property and ultimately build a picture of graziers' perspectives. I will ask to be referred on to another grazing family, either similar or different to yourself. This will help ensure that I talk with a broad cross-section of graziers. I would like to take some photos of the property for use in the discussions. I would like to talk to *retired* graziers either by telephone or in-person at a mutually convenient location, on audio-tape if in-person. I would like to ask government officials, members of non-government organisations and those who play a significant role in their community about the constraints and enabling factors regarding rural sustainability, on audio-tape.

I agree to participate in this study and:

1. I have read the associated Information Sheet outlining the nature and purpose of the project and the extent of my involvement, and have had these details explained to me. I have had the opportunity to ask further questions and am satisfied that I understand;
2. I have been informed as to the nature and extent of any risk to my health or well-being;
3. I am aware that I may withdraw from the project at my request at any time without consequence;
4. I understand that, in respect of any information including audio or visual records obtained during the study, confidentiality will be maintained and that I will not be identified in any way in any written materials produced from this study.

This study has clearance from the Behavioural and Social Sciences Ethical Review Committee of the University of Queensland in accordance with the National Health and Medical Research Council's guidelines. The clearance number is: 2002000303. You are of course free to discuss your participation in this study with Jenny Moffatt on (07) 5460 1321, or 0422 183 011, or Professor Helen Ross on (07) 5460 1648. If you would like to speak to an officer of the University not involved in the study, you may contact the Ethics Officer on (07) 3365 3924.

Participant's
signature:……..……Name:……

Signature of witness: …….. Name: ……..……

Date: ……

Appendix B – List of concepts in interview guide

Topic	*Detail*	*Prompts*
Interaction between social; economic; environmental	- how the individual objectives are combined - relative weights of these - family influences	Tell me a story about …. tree clearing What things fit together?
Learning	- life long learning - formal learning opportunities - knowledge; learning; information flows - family influences	Who did you/do you learn from? Who influences how you see things?
Business	- financial - staffing - planning; succession - cost of sustainable development - PMPs/EMSs - risk - computers; Internet	What makes a property viable in the longer term? What are some government policies that influence your business? How? What could be skipped when money is short?
Land	- knowing the land; land literacy - relationship with land: connectedness; stewardship; custodial relationship - priorities - appreciation of land beyond the utility value	How should land be managed?
Scale	- how issues change as scale changes; relevant scale for each issue - economies of scale	
Constraints and opportunities	- stress and coping - people being greedy or taking opportunities - intention of polices/programs	What are the things that make it hard to live here? What's working in this community/ property? How do you want things to be and how can we get there?

Topic	*Detail*	*Prompts*
Priorities; goals	- objectives (social, economic, biophysical) - decision making strategies	What are your goals? What influences you reaching them? What are the most important things?
Change	- historical perspective - change expected in next ten years - pace of change - desirability of change - adaptation/aversion/risk-taking - linear/multidimensional	What developments have shaped or changed this community? What hasn't changed? Why? How is change instigated - from the outside or the inside?
Power	- who has it? - what sorts are there? - who does it - advantage/disadvantage?	
Rights	- choices - concept of ownership - stewardship - regulations undermining?	What are the conflicting interests?
Debates	- controversies; conflicts - regulation vs voluntary - public vs private - tenure vs leasehold - production vs conservation - native title; tree clearing	What are people talking about? What aren't people talking about? Who shapes the debates?
Institutional issues; structural issues; red tape	- access/availability of services/information - rural adjustment scheme - land tenure - regulations; legislation - increased paperwork - participation; consultation - regionalisation - government versus local understanding - city people with different values - size of rural communities - politicians; politics	What policies, programs, cultures, organisations impact/not working? What are some government policies that influence your business? How? What government bodies/departments do you have contact with? How does government get graziers on board? What are people unhappy about?

Topic	*Detail*	*Prompts*
Worldview	- central belief system; values; beliefs and practices - degree of conservatism; moral issues	Who are the people like you/think like you/same attitudes/beliefs but don't live on the land? What's the most important thing for you?
Women only issues	- multiple and changing roles - power and autonomy - informal and formal leaders	
Groups	- type, purpose and frequency of involvement - number of groups involved with; length of membership - groups not involved with and why; risks of participation - other ways of participating	Why are people involved in groups?
Local community	- key players - local services; commercial services - social opportunities - media: eg newspaper - quality of community life - leadership	What's the biggest social event in the area? Who runs things around here? Who makes thing happen? What makes a community viable in the long term?
Tomorrow's rural community	- declining terms of trade - lack of youth employment - decreasing rural population - increasing need for off-farm income - marginalisation of pastoralism - energy of the bush - what is evolving/emerging - resilience - communication - the future of this property	What assistance/programs would increase/enable greater sustainability? What's holding people back? What do you think things will be like in ten, twenty years … children will be doing in x years … country will look like in x years? How do you want it to be?

Appendix C – Questionnaire

ID: …….. Date: ……..……

Property

1) Size: hectares: ……..… or acres ……. 2) Tenure: Freehold / Leasehold

3) Type of lease:
……..……..

4) Possession: own & manage/manage only. 5) If owned, acquired through: inheritance / purchase / scheme

6) Soils: ……..…….

7) Trees: ……..…

8) Grasses: ……

9) Average annual rainfall: millimeters: ……..…inches: ……

10) Sources of water: ……..……..

11) This property is viable: a) Always b) Never c) Will be in the future d) Good seasons only e) When commodity prices up f) Was in the past g) Other: ….…….……
……..

12) Length of time on this property: …….years. 13) Length of time a grazier: ……years

14) Percent of equity in the property/business: ……

15) Percentage of income from: Property: …..; Off-farm investments: ....; Employment: ….

Family

	Male head of house	*Female head of house*
16) Highest level of education completed	Primary Grade 10 (junior) Grade 12 (senior) Tertiary	Primary Grade 10 (junior) Grade 12 (senior) Tertiary
17) Age in years:		
18) Current occupation/s:		
19) Gender & ages of children:		

Appendix D – Example of coding

In the analysis of the first few interviews, there were items that suggested business management was an important aspect of sustainability. As the data collection and analysis continued several aspects of business management emerged. Some participants spoke broadly about their goal and others about how they operated their business. I coded these as 'goal' and 'strategies'. The text coded under 'goal' contained elements that mentioned being under economic pressure and being economically viable. Examples of text coded as being 'economically viable' follow. This is a Level 3 code in the coding framework in Appendix G. The other codes at this level are: Economic pressure and Give children options. These are the three types of goals (a Level 2 code); goals and strategies form the business component (a Level 1 code) of Enterprise management (Theme 3).

The original identification system is used in the examples below. 'CW' and 'G' refer to the location of the participants, 'i' indicates an interview, 'pg' equals a private grazier, 'cg' a company grazier, 'm' indicates that the individual has multiple roles in the community and some of these were key informants, and the number identifies the specific individual. Much of the text below was also coded under other concepts.

Cwipg13: I do feel that when cattle prices are very low we can't be economically viable but if they're around, between $1.30 and $1.70, I mean if its too high you know its going to go bust, but if its about that we can be really viable without having to encroach government handouts and things, you don't need them at that level.
Cwipg27: For Packer it didn't matter if stock died eg by being unmothered because is was too costly to muster again.
Cwipg28: … yeah its based on money, Kerry Packer's mob … they take big losses, they don't do their waters every day, its not conceivable that they do it. … That's it, big corporate run a real tight business and it's got to be a tight business.
Cwipg34: … I think that when it comes down to the wire, one of the other things that we sort of support I guess because we are family farmers, but and we're not against the big organizations, the AA companies and the company places, they've got a place and a very good place in the bush. But it's a bit the same of when it gets down to the wire, the family farm will be the one that'll stand by you and make sure that you're fed and you're watered

and you're clothed. Because the big ones, like the National Mutuals, and things, they get tough and they're gone, because everything depends on that bottom line.

I: The financial bottom line?

Cwipg34: Yes. Yes. Whereas we're here for more than the bottom line.

Cwipg52: Well, you can't have sustainable industry, I don't believe, and sustainable ecology as well.

I: You can't?

Cwipg52: I don't think so. Because as I said, the skyrocketing costs of … you've got to keep developing otherwise you're just not there. Or, increasing your numbers, you know it just … I don't know how they're going to get round it. Very difficult. Sustainability is something that is all close to our hearts and we'd like to see it, *our* sustainability is a lot closer.

Cwipg26: … business has to be profitable, has to be economically sustainable otherwise its not ecologically sustainable.

Gicg1: The biggest economic issue of course is our cattle price, looking at future generations or anyone else, the more pressure you come under as far as price of cattle, the more pressure is placed on everything. … So ahm, and the reason a lot of these places are bigger now is, a lot of places are becoming more amalgamated, buying up more, because there are economies of scale and if you don't get economies of scale, and the only way to get economies of scale is to take up more country. So you're chasing your tail all the way through, so, yeah. I think they're the main concerns for the future is going to be economic sustainability given the pressures of environmental and social reforms that are going on.

Gicg51: People are looking at ways of being efficient in the longer term, to increase productivity. Things that have increased it already are: Brahmans, licks and fences; also rotational grazing and legumes/pastures.

Gim10: … that's why I'm there, is to survive. Hopefully make a reasonable sort of a living, look after my country, be able to hand it on; that's survival. Not having to sell the property, keeping it in the family; I come from a family that can actually trace its land ownership for 500 years.

Gipg15: I think there's only one, the land management issue that really springs to mind with me is, you know saying about the margins being squeezed, we've been squeezed that much, a lot of people and us included, what we're probably running too many cattle, if we were running less we'll probably go down the gurgler.

Gipg18: I think it's changed, change is being forced upon us to remain economically viable.

Gipg18: I guess where we sit we're masters of our own destiny, apart from the global pressures on commodity prices and, but in terms of day-to-day management of our own property to remain viable, we're masters of our own destiny in that respect but we've still got avenues in terms of financial advisors and I think we become more aware of what we can do to make our income work for us these days, especially just in the last five years, than making us work for our income. And I think that's a fairly important part of our management strategy I guess for want of a better word, to start looking now to off-farm investments which our grazing enterprise produces and I guess as far as long term sustainability that's a major component of that, so its not just selling the cattle to put dams and waters and fences in now, its got to the point now where even though we still need capital improvements there's a need to look at off farm investments as far as what money we make.

Gipg19: In Australia, we've no different to anywhere else. But I guess it comes down to getting smarter at what we do in terms of securing our own economic viability which then flows on to the long term deal where you look at your kids either coming back on to the land or going somewhere else. I've got no answers, its just too big of problem to, and the only way we can sort of combat that is to become smarter at what we do.

Gipg25: Last year was the first time that we made big money since I've been in the industry. I mean we really made some money! We really got somewhere last year. There's … our generation has never seen a boom. Last year was the nearest we've gone to seeing a boom. Now, my father, he saw the wool when it was a pound a pound. And they had money! They really had money to spend. And when you've got money to spend, you don't really hold it … you bank a little bit and might buy a unit on the coast or something. The first thing is put it back into the place. And last year we made some money! And you can see it in this industry. People are spending money and the point I'm sort of working around to it. I've done a lot of things on this place and other places we've got that I'm not particularly proud of. I've done improvements that were on the cheap. We needed them. We really had to skimp. You know, we haven't done stuff that lasts for you know, for 30 years or so. We haven't been able to build things that … You know there's a lot of improvements I've done on this place that we ; we couldn't look that far ahead. We really skimped to get it done. And that's a pity, because you like to be able to do things a lot better. … let's face it I mean there's different ways of looking at it, but I tell these kids first and foremost you've got to survive.

Gipg3: I think that burden to me, the crux of the survival of an enterprise comes back to the dollars and cents.

Gipg3: There's a culture there and that culture hasn't been changed to get themselves up to speed with what's going and I think there is also what I'd term a marginal area and it's very difficult in a marginal area to get surplus funds there. That comes into the situation, so we have try to be, one way we can survive is we can keep cutting our costs because we don't get other advantages to do it so probably to some degree I don't see why we have to totally accept the commodity price is what it is. There are still a lot of things we can do to reduce those input costs to make that margin just that little bit better. It's likely if we've blaise about accidents and we have to pay a week's wages for someone to be off, that's $400 or something, so you can throw away $400 or something. If you don't have a service program for our vehicles, maintenance, whilst we don't see it, actually see the dollars and cents going out, at the end of the day we pay for it, you know it cost us another $1000 to keep that vehicle on the road so we weren't careful and so it goes on, with the various things that are part of the make up of running these enterprises.

Gipg46: Well, things have changed. When I was a boy, there was a lot of privately owned properties in this area and the spirit of co-operation and 'help your mate' and all that was very strong, very strong, but now that the companies have bought a lot of these privately owned properties, they are instructed that there's only one thing that's important and that's money, the bottom line, they work on a tight budget and they haven't got anything; they're not allowed to give anything away or help anybody. That is the thing that has changed, you know?

Gipg5: … in most businesses, not only this one … to have quality you're got to have quantity, that's what it amounts to. That's the very reason why we sold 'x' property. Around about 4 and a half thousand head there. Your figures were telling you year after that you; we got to the stage where we were sitting stagnant. Now if you're sitting stagnant you've got a long way to travel. So we decided that we'd try to get bigger. Well there's no way in the world it would support my son and I.

Appendix E – Contact Summary Sheet

ID: .....…… Date of interview: .....…….…

Interview number: ..... Date of transcript: .....……..

Location of transcribing: …….. Today's date: .....……..

1) What were the main issues/themes in this contact?

2) Summarise the information I got (or failed to get) on each target question/concept:

Question/concept Information

3) What else was salient, interesting, illuminating or important?

4) What new (or remaining) questions are there for future interviews?

Appendix F – Debriefing document

Date of this document: ……..

Following interviews coded as: ……..……....

Interviews transcribed at this point are: ……..…

1) Where am I doing this?

2) How do I feel?

3) What about these interviews is 'staying with me'/unresolved?
Positive; negative; questions that have arisen; confused about …

4) Reflect on:
1. How do participants feel post interview about the interview, and about me?
2. Fitting in with household?
3. What I should I have asked about?
4. Notes for thankyou letter and debriefing phonecall.

5) Changes:
1. How to present the project to people?
2. Questions to add?
3. Questions to delete?
4. Change how I ask questions?

6) What was missing?

7) What was new, repeated?

8) What did people like/dislike talking about/doing?

9) What was salient, interesting, illuminating or important?

Appendix G – Coding framework

Level 1	*Level 2*	*Level 3*	*Level 4*	*Level 5*	*Level 6*
Theme 1: Elements of the grazing way of life					
Agrarianism					
Rural idyll	Aesthetic appeal	Beauty			
		Freedom			
		Space			
		Tranquillity			
		Near pristine			
	Child rearing				
	Supportive				
Lifestyle	Independence				
	Balancing				
	Sharing				
	Comfort				
	Opportunities for children				
Hardships	Hard life	Long hours/days			
		Style hard			
		Manage stress			
	Isolation	Isolation			
		Fewer people			
		Limited social life			
		Isolation a positive			
	Family pressures				
Choice	Chose to go here				
	Staying				
Passion	Bush				

Level 1	*Level 2*	*Level 3*	*Level 4*	*Level 5*	*Level 6*
	Life				
Challenges and satisfaction	Achievements				
	Satisfaction				
Dream					
Theme 2: Context and Challenges					
Context	Climate and distance	Climate			
		Distance			
		Safe country			
	Infrastructure and services	Infrastructure	Power	Generated	Education
					Health risk
				RAPS	Running costs
					Inadequate
				Grid	
			Roads	Poorly maintained	
				Improved	
			Telecommunicat-ions	Limits	
		Services	Education	Home tutoring	
			Extension		
			Health		
			Fewer services		
	Market and season dependent	Droughts and commodity prices			
		Markets	Commodity prices		
			Cyclic and global		
		Seasons	Droughts; wet		
Challenges	Participation and consultation	Consultation	Time and distance constraints		

Level 1	*Level 2*	*Level 3*	*Level 4*	*Level 5*	*Level 6*
			Outnumbered		
			Senior bureaucratic control		
			Lack of return		
			Typical style		
		Ruling and regulating	Ruling		
			Regulation overdone		
			Teaches irresponsibility		
	Priorities	Environment	Environment preferenced		
			Lack of development		
		Indigenous	Government cause of distress		
			Indigenous preferenced		
		Votes and cities	Urban preference		
			Votes		
		Combinations	Indigenous and environment		
			Urban, environment, Indigenous		
	Impacts	Insecurity of tenure	Freehold		
			Leasehold		
			Native title		
			Slow process		
		Lack of development	Killing towns		
			Small properties		
		Rural secondary			
		Ill-feeling	Annoyed		

Level 1	*Level 2*	*Level 3*	*Level 4*	*Level 5*	*Level 6*
			Frustrated		
Theme 3: Enterprise management					
Business	Goal	Economic pressure			
		Economic viability			
		Give children options	Good education		
	Strategies	Development			
		Efficiency			
		Planning	Balancing		
			Long-term perspective		
			Planning		
			Prioritising		
		Economies of scale	Advantage of large property		
			Small properties		
		Supplementary	Workload	High	
				Increasing	
		Knowledge	Business skills	Now	
				Future	
			Combine knowledge		
			Experience and observation	Experience	
				Observation	
			Lack knowledge		
			Supplementary	Skill and knowledge loss	
		Financial management	Debt management		
			Diversification	Off-farm	Long-term

Level 1	*Level 2*	*Level 3*	*Level 4*	*Level 5*	*Level 6*
					investment
					Off-farm work
				On-farm	
Land	Caring for it	How	Broad	Long-term perspective	
				Long-term monitoring	
			Specific	Graze to country	
				Don’t overgraze	
				Pasture management	
		Why	For kids		
			Good for business		
			Increasing awareness		
	Over-grazing	Forgiving country			
		How	Drift		
			Knowingly		
		Why	Financial priorities	Keeping up	
				Active business strategy	
			Poor financial management		
			Small property		
			Debt		
	Pests	Animals	How to control	Group effort	
			Status	Dingoes; dogs	
				Pigs; brumbies	
			Why not controlled	Government inaction	
				Not baiting	
				Cared for	
				Cross-breeding	

Level 1	*Level 2*	*Level 3*	*Level 4*	*Level 5*	*Level 6*
				Habitat	
		Vegetation	How to control	Group effort	
			Status	Encroachment	
				Out of control	
				Weed threat	
			Why not controlled	Low government funding	
				High cost	
Stock	Breeding				
	Feeding	Fewer heavier stock			
		Hormone supplements			
		Pasture			
		Supplementary feeding			
	Managing	Educate cattle			